The Comprehensive Shoreland Protection Act (CSPA)

Investment in the Future

The Changes to the CSPA

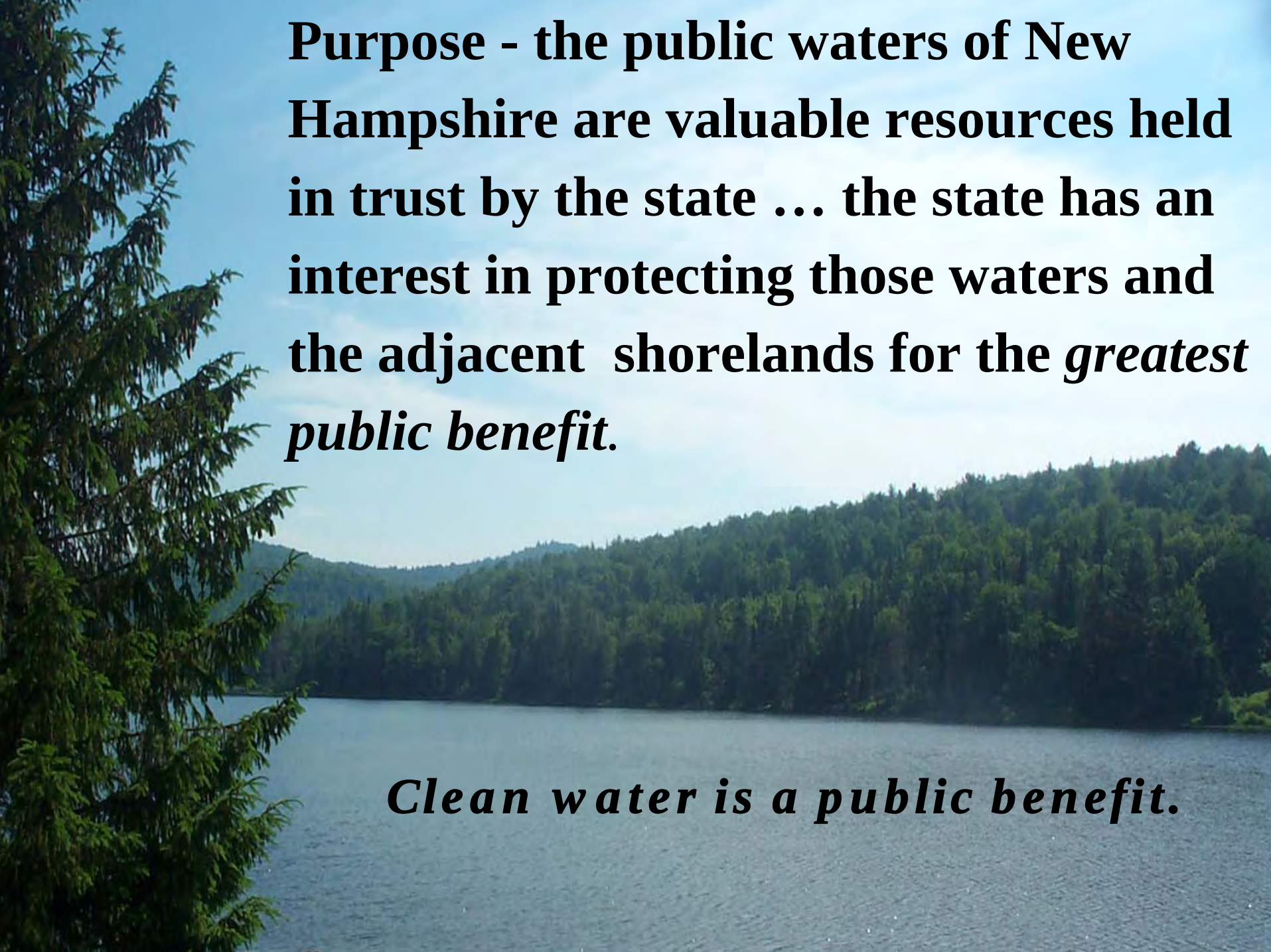
New Effective Date:

July 1, 2008

Except:

- **The 50’ primary building setback is in effect for every town as of April 1, 2008**
- **The Saco and Pemigewasset are jurisdictional as of April 1, 2008**

Photo: NH Lakes Association



Purpose - the public waters of New Hampshire are valuable resources held in trust by the state … the state has an interest in protecting those waters and the adjacent shorelands for the *greatest public benefit.*

Clean water is a public benefit.

Forested buffers perform important services:

- **Promote storm water infiltration and moderate the impacts of heavy rain – reduce erosion.**
- **Stabilize and shade the shoreline.**
- **Extract nutrients and some contaminates from the soil.**
- **Wildlife habitat.**

The Duff Layer

Organic matter and woody debris

- **Moderates the impact of heavy rains.**
- **Absorbs and holds moisture.**
- **Adds humus to soil and helps give soil structure.**
- **Helps prevent weeds.**


Natural woodland buffers create the conditions for clean water.
Photo: Kally Abrams

The exposed conditions and improperly installed erosion controls on this site are an invitation to disaster.

Impervious surfaces shed water.

Pitched impervious surfaces can accelerate the velocity of the flow and increase the potential for soil and contaminates to erode and migrate into the water body.

Why is soil erosion a problem?

Soil commonly carries phosphorus and other contaminates.

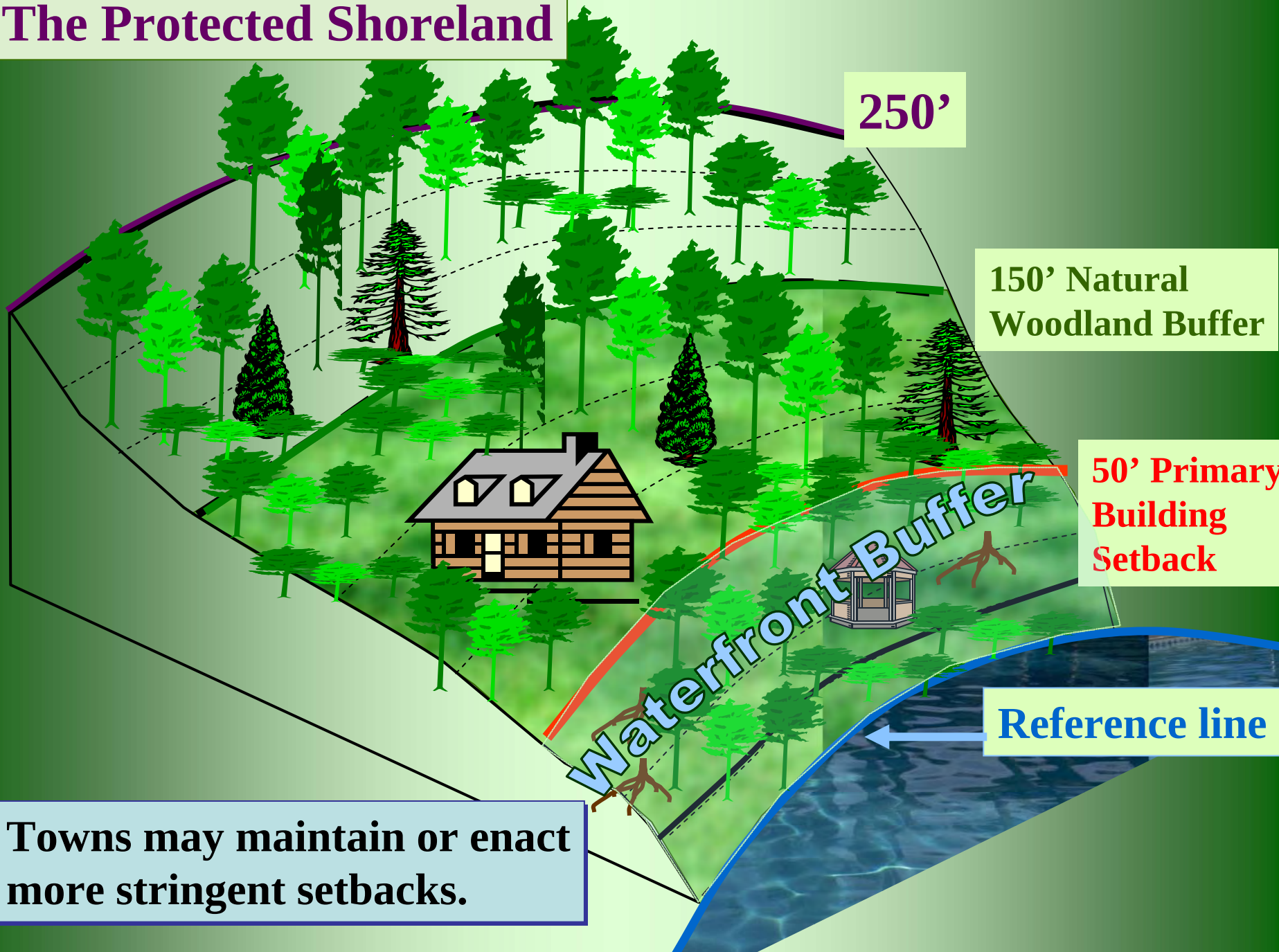
- Phosphorus promotes algal growth.
- Some types of algae can cause health problems.
- Algae can cause odor, reduce water clarity, and ultimately rob the water of oxygen**.**

When sediment gets into water bodies, it can also:

- Accelerate lake aging.
- Abrade fish gills and smother fish nest sites.
- Reduce water clarity.

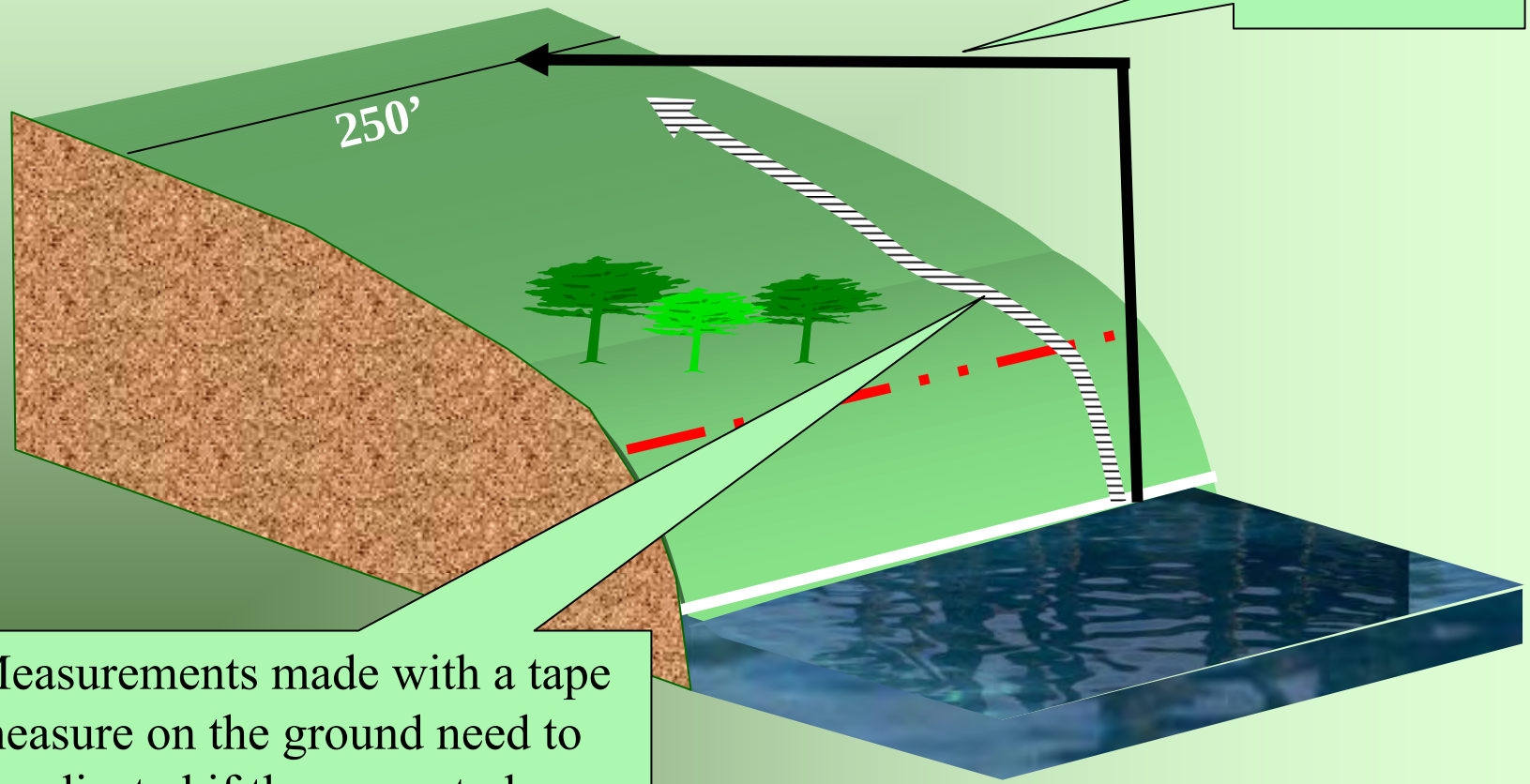
If you observe a significant algae bloom or scum, please call DES at 271-2304. DES will sample the scum and determine if it contains the cyanobacteria that are associated with toxin production.

The Protected Shoreland



Towns may maintain or enact more stringent setbacks.

Measurements from the Reference Line are based on Horizontal (Surveyors) Distance.



Which water bodies will come under the protection of the CSPA?

- **Tidal Waters – All waters subject to the ebb and flow of the tide.**
- **Lakes and Ponds (10+ acres) on the DES Official List of Public Waters**
- **Fourth Order Streams**
- **Designated Rivers (those rivers designated under RSA 483)**

Coming Soon:

DES Consolidated List of Shorelands under the Jurisdiction of the CSPA by town

Acworth-Cold River - ***Designated Segment*** - From the outlet of Crescent Lake Dam in Acworth to its confluence with the Connecticut River in Walpole.

Town	Rivers		Lakes and Ponds				
	4th Order Sterams and Designated Rivers	Beginning of the 4th order segment or the Beginning of the Designated Segment	Lakes and Ponds	Status	AKA/Comment	Sfc. Elev.	Size in acres
	Order						
	Dodge Brook	Juncture of unnamed 3rd order stream in Lempster					
Albany	Pequawket Brook	Juncture of Banfield Brook in Madison	Back Pond	NL		10.3	808
	Swift River	Juncture of Paugus Brook and Wonalancet River in Tamworth	Big Church Pond	NL	Big Deer Pond	16	1243
			Iona Lake	NL	Knowles Pond	74.2	677

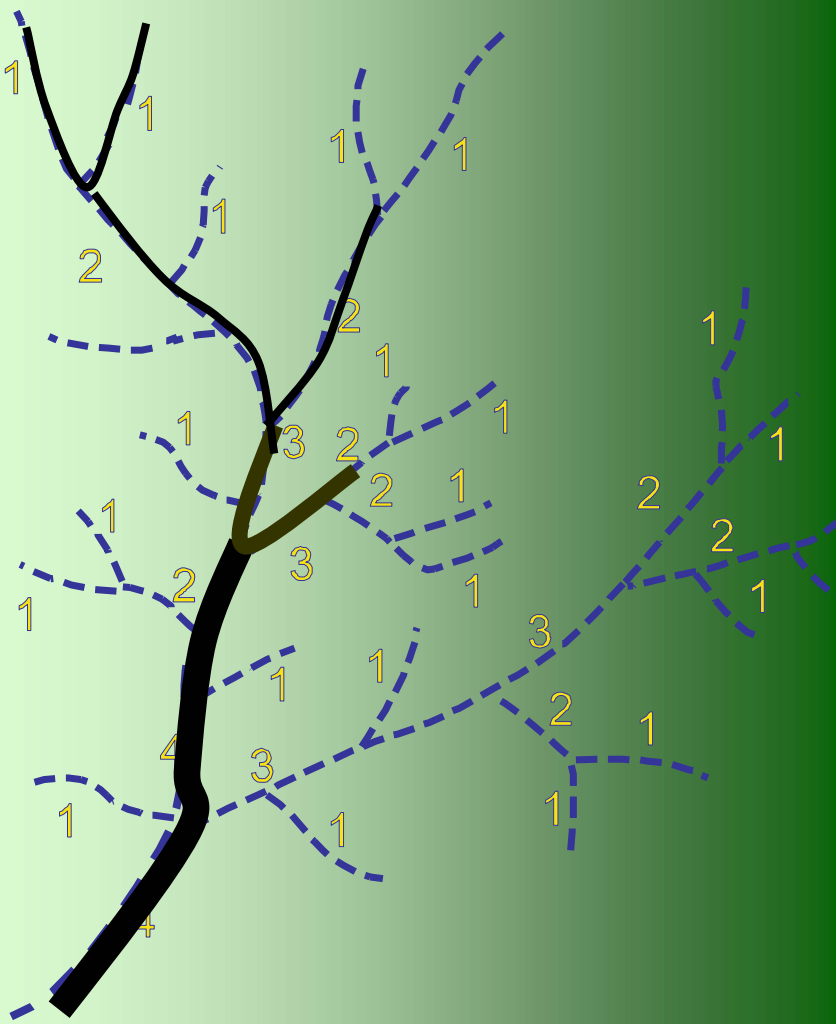
River Ordering

The Strahler Method

What are fourth order streams?

Stream ordering is a way to classify the size of a stream.

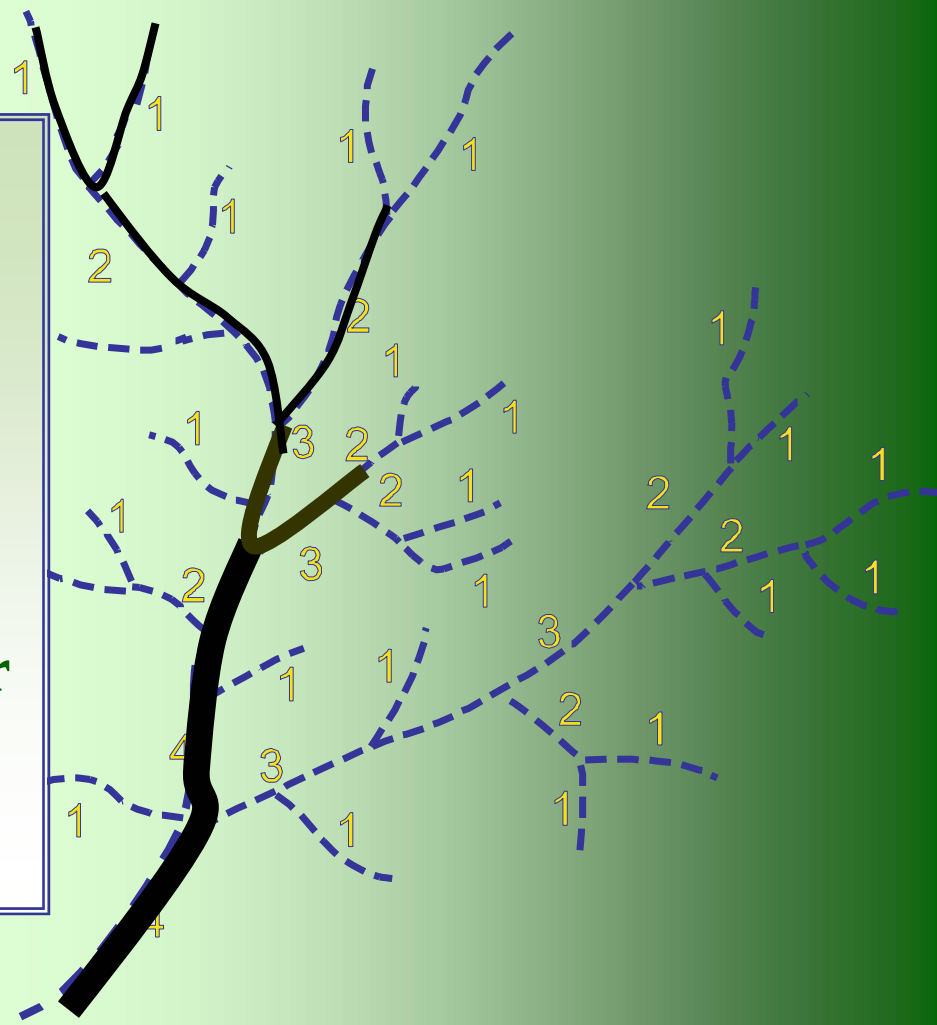
The smaller headwater streams shown as dashed blue lines on USGS maps are first order streams. When two first order streams come together, it creates a second order stream. When two second order streams come together it creates a third order stream. Two third orders make a fourth order stream.



River Ordering

The Strahler Method

For stream ordering, New Hampshire uses the NHHD – New Hampshire Hydrographic Dataset archived by the geographically referenced analysis and information transfer system (GRANIT) at [UNH].



Where is the Reference Line?

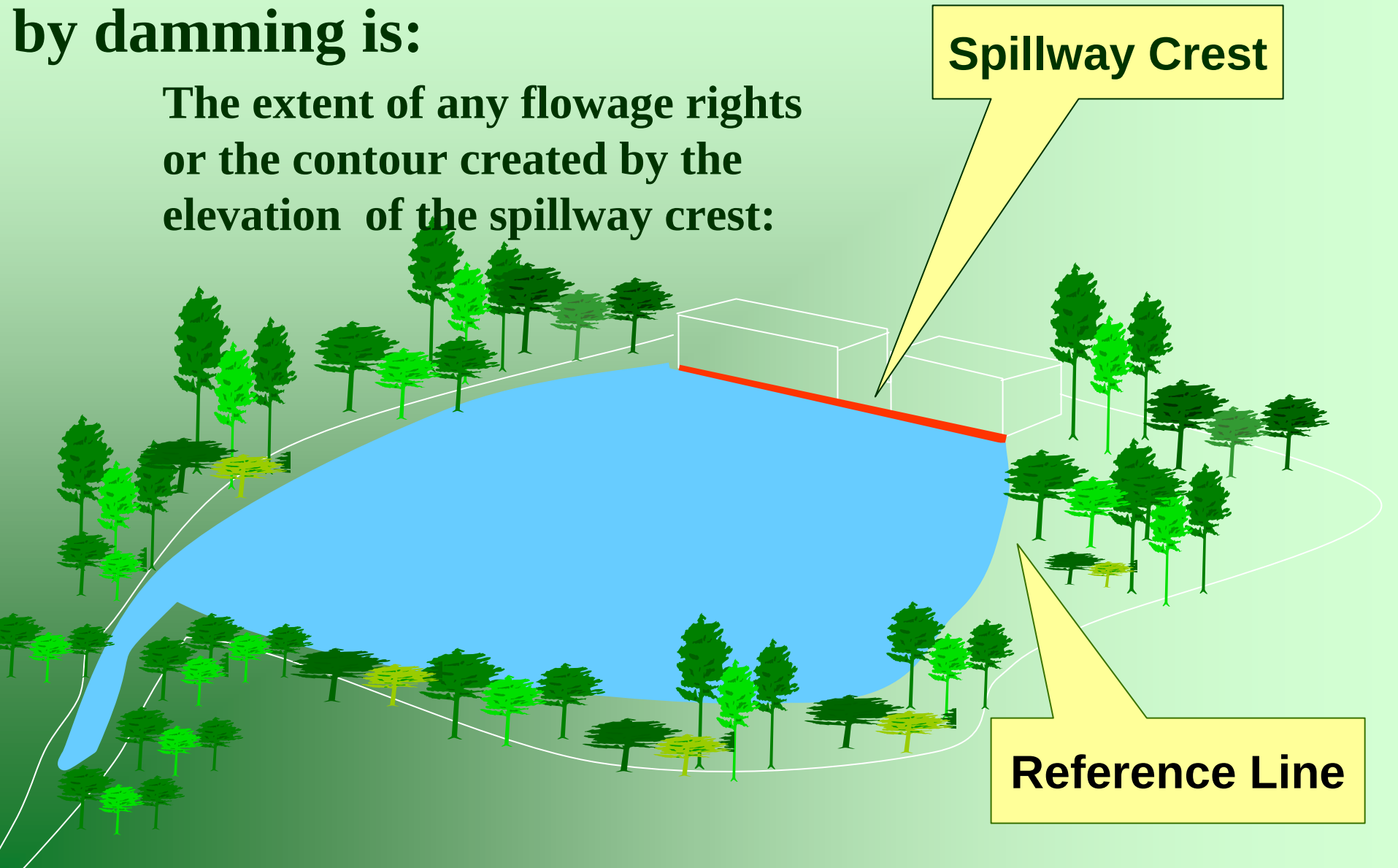
The Reference Line for Natural Lakes and Ponds is the <u>Natural mean high water level.</u> DES makes the determination.

- **NHDES Natural Mean High Water Elevations (List) from Dam Bureau and *NH Official List of Public Water bodies, or***

- ***DES Consolidated List of Shorelands under the Jurisdiction of the CSPA***

The reference line for lakes and ponds with artificial impoundments or water bodies raised by damming is:

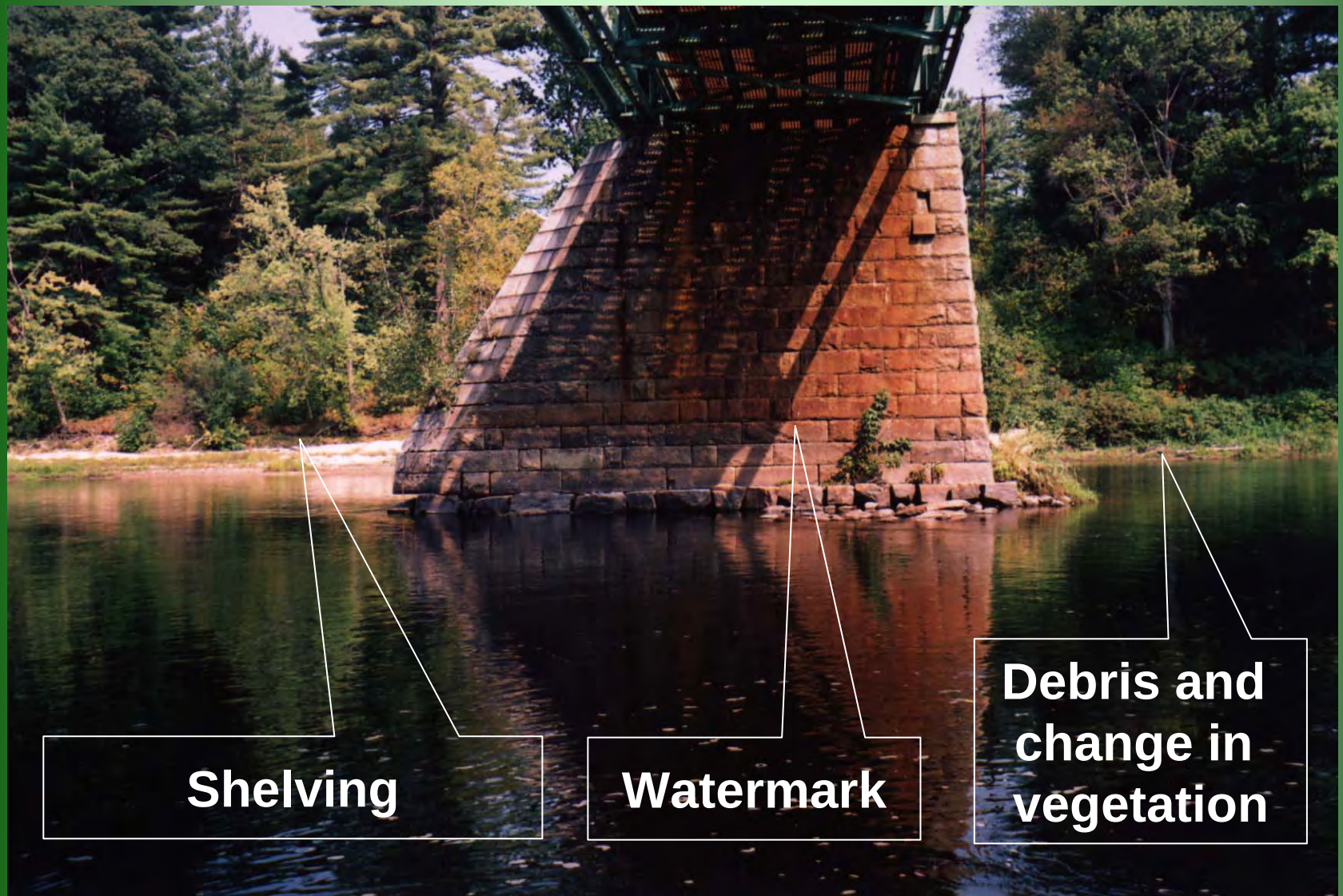
The extent of any flowage rights or the contour created by the elevation of the spillway crest:



The reference line for fourth order streams is the Ordinary High Water Mark

- The mean (average) high water level excluding extreme storm events.
- Appears between the top of bank and the edge of river bed
- Found by looking for a combination of stained rocks, debris snags, topography (shelving) and a marked change in vegetation

Fourth Order Streams



Oceans, Estuaries, and Tidal Rivers

Reference line is taken from the highest observable tide line (the normal monthly high - not storm events)

Tidal…continued - Highest Observable Tide Line

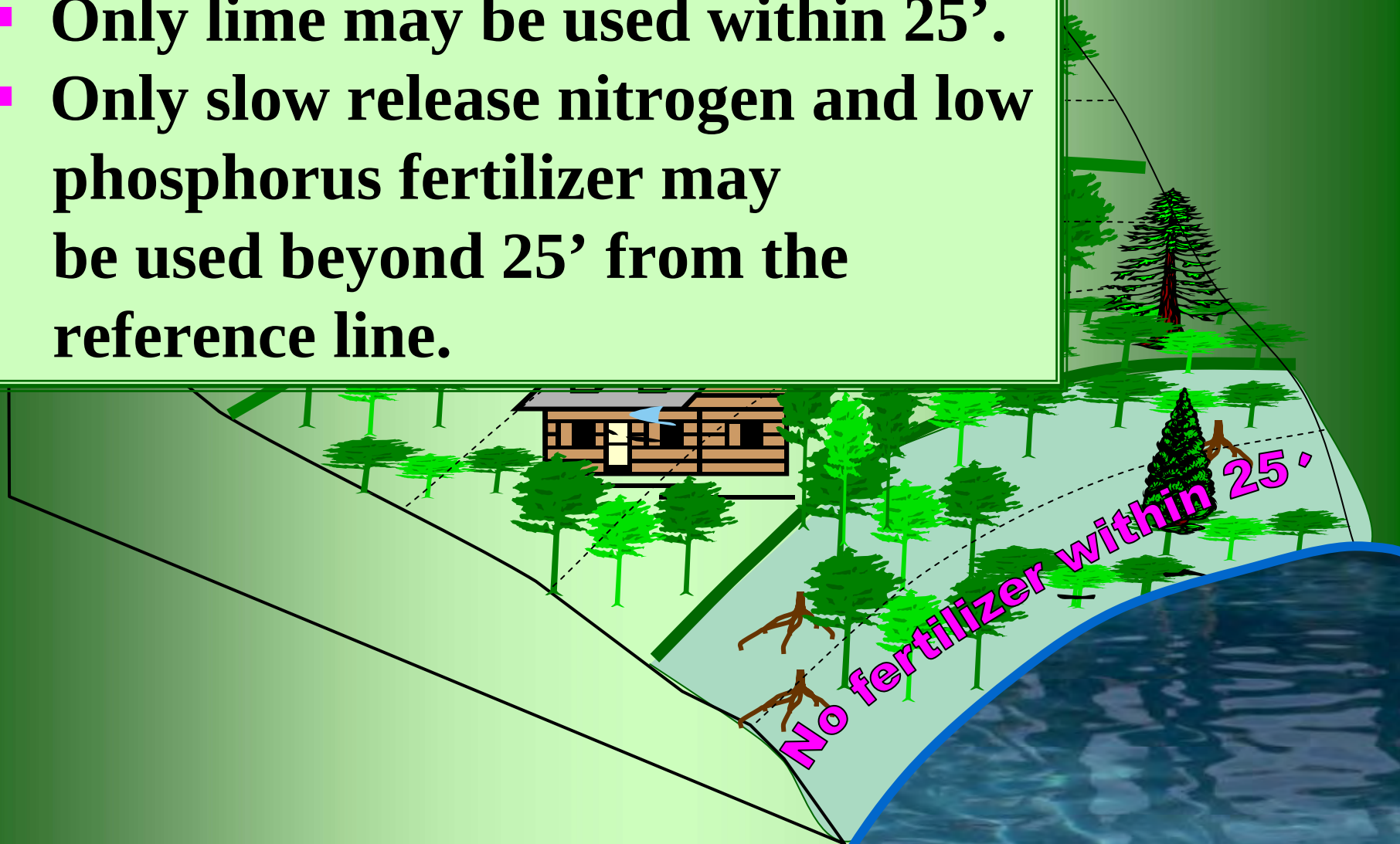
- **A line of flotsam and debris**
- **Landward margin of salt tolerant vegetation**
- **A physical barrier that blocks farther flow of the tide.**

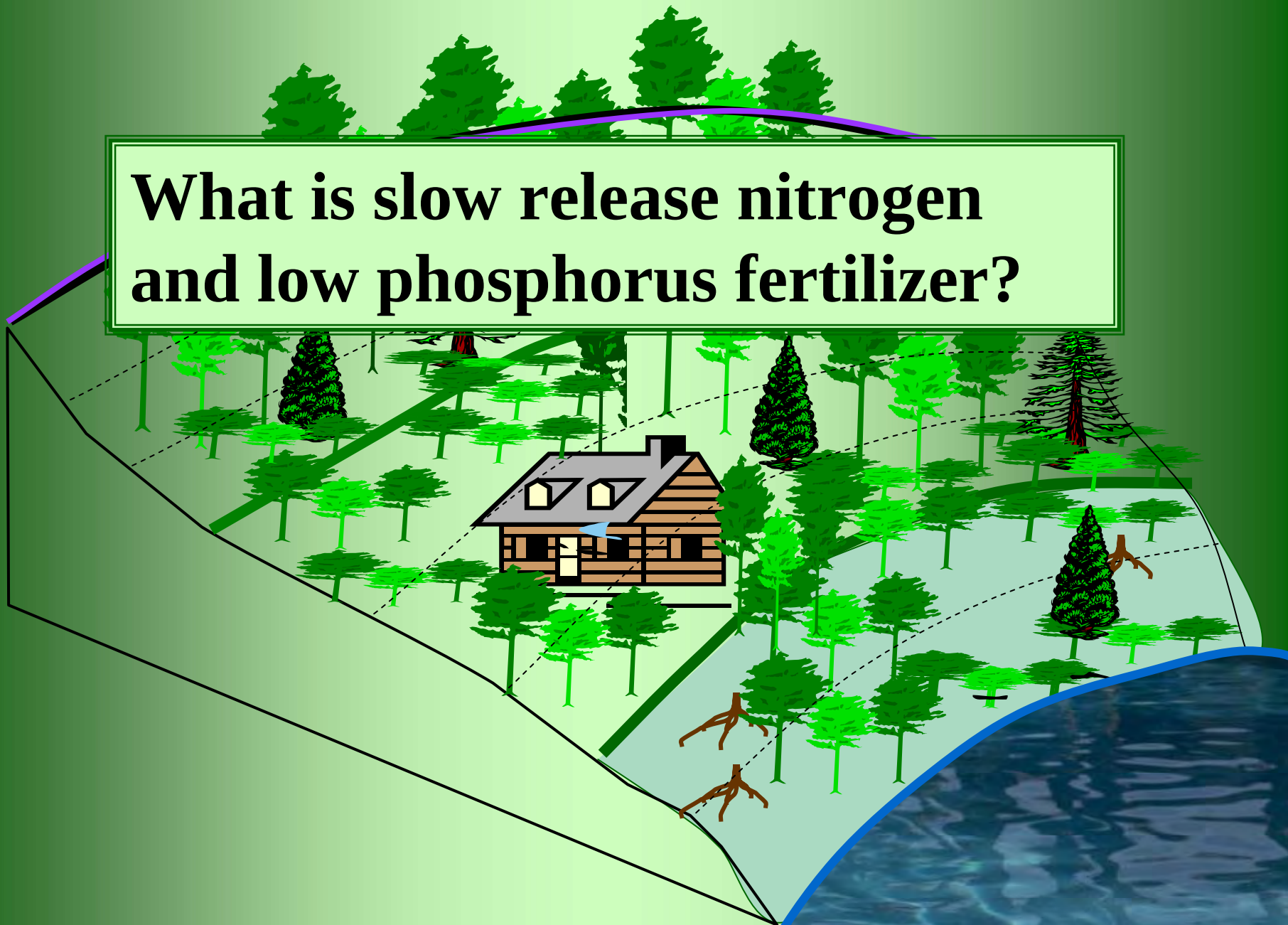
Exemptions

In general, forestry, agricultural, and public water supply activities requiring vegetation removal are exempted.

Fertilizers within the Protected Shoreland:

- **Only lime may be used within 25’.**
- **Only slow release nitrogen and low phosphorus fertilizer may be used beyond 25’ from the reference line.**




What is slow release nitrogen and low phosphorus fertilizer?

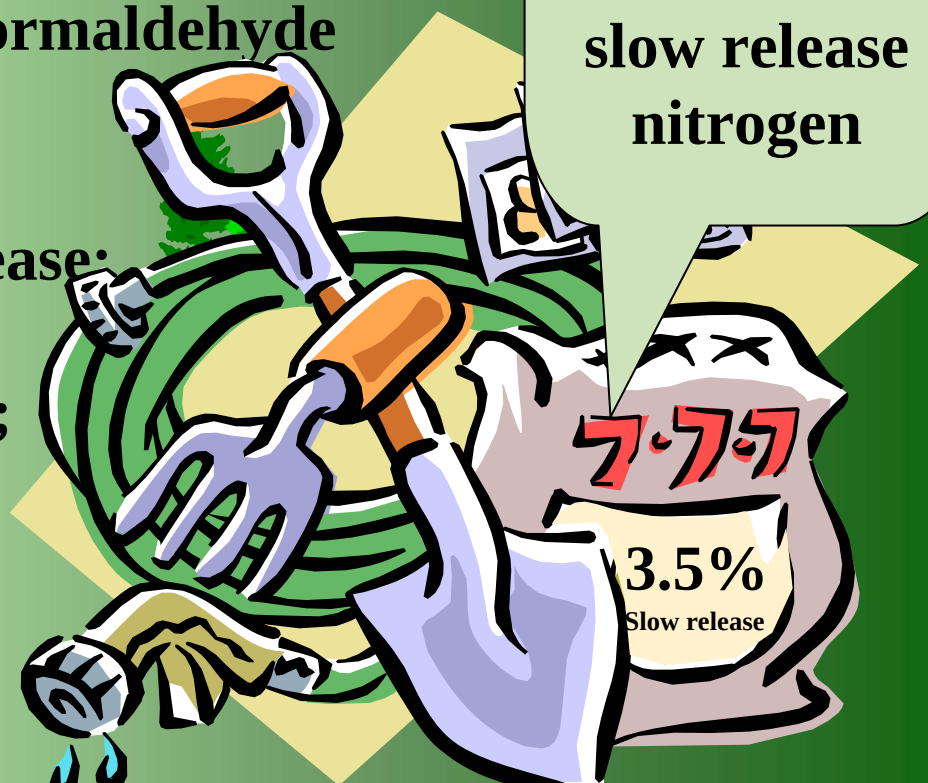
Slow Release Nitrogen

A nitrogen component which is at least 50% slow release nitrogen. The nitrogen is either:

- **Coated with sulfur, plastic or resin; or**
- **In an insoluble form, for example natural organics (blood meal);**
- **Some ureaform and urea-formaldehyde products;**

In soluble form, but slow release:
MDU – methylenediurea;
DMTU – dimethylenetriurea;
DCD – dicyanodiamide;

A package with 7% nitrogen must indicate that there is at least 3.5% slow release nitrogen



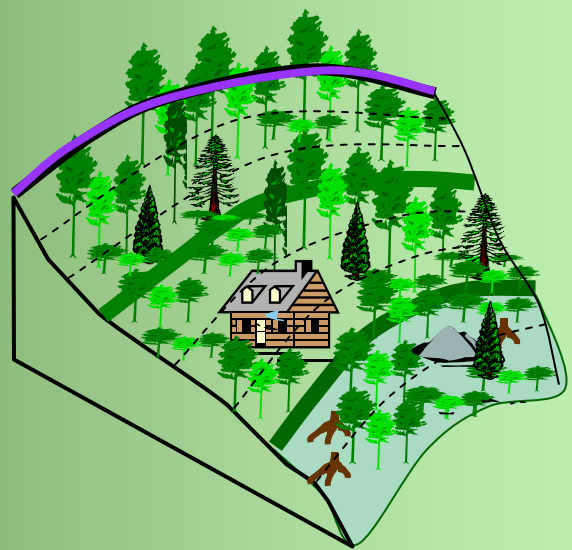
<u>Low Phosphate</u> – 2% or less.
Examples combined with nitrogen and potassium:

<u>N P K</u>

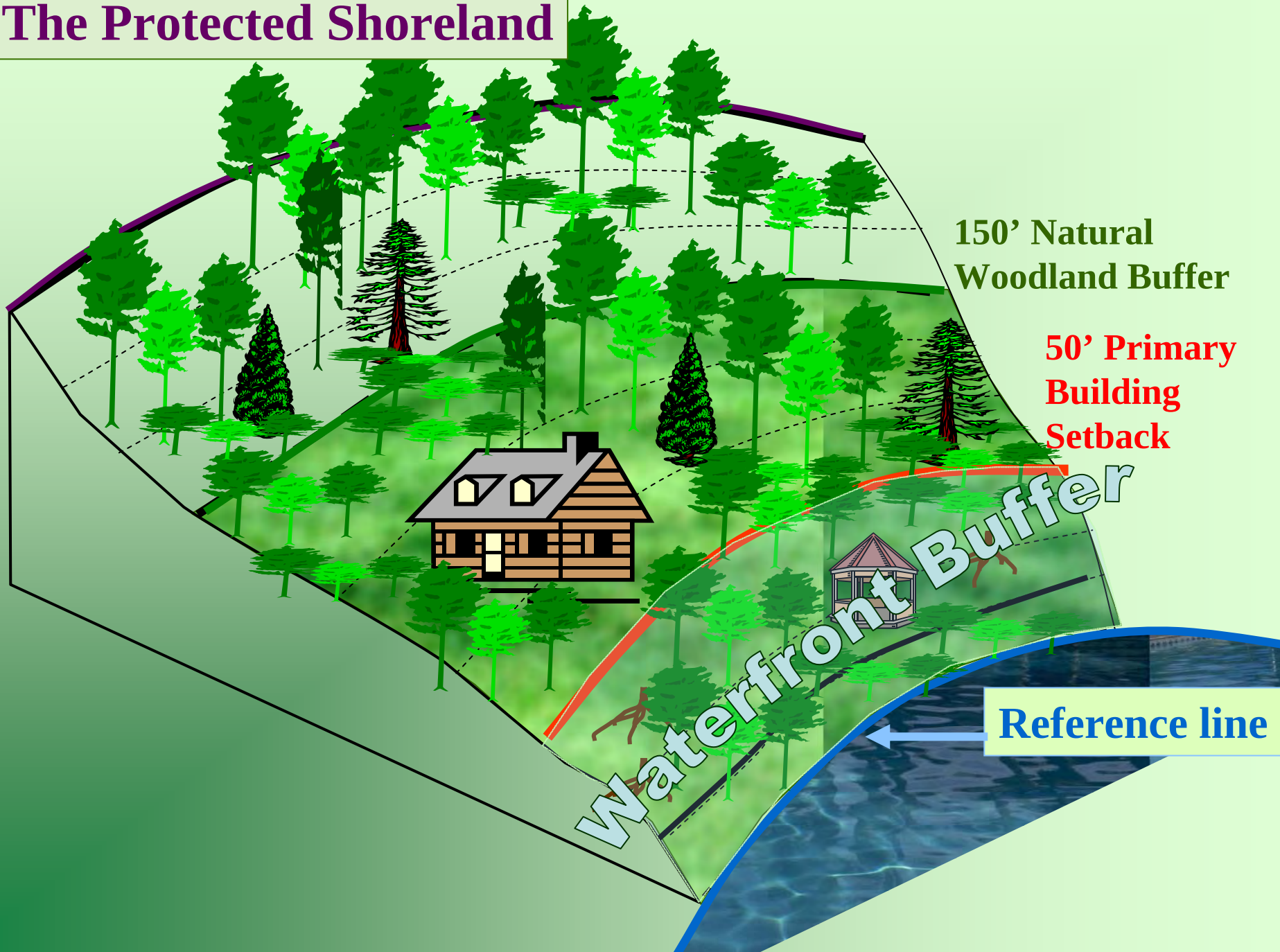
4-2-4
3-1-2
3-1-1

Waterfront Buffer
Within the 150’ Natural Woodland Buffer

A Waterfront Buffer extending 50’ Back from the Reference Line



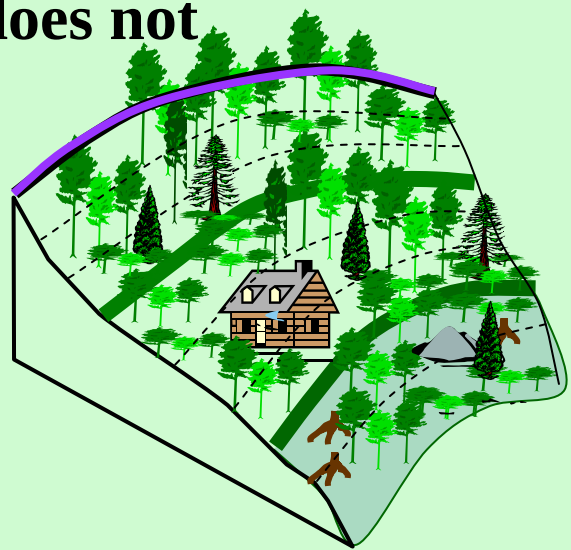
The Protected Shoreland



Within the Waterfront Buffer

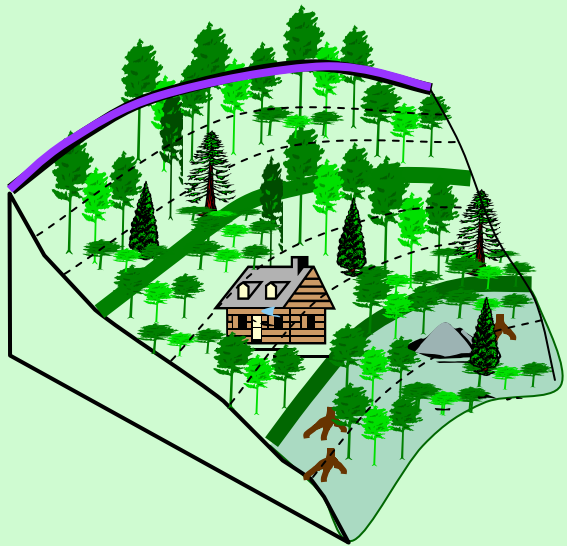
- **Pesticide/herbicides may only be applied by a licensed applicator.**
- **Stump, root, or rocks may not be removed**
- **Natural ground cover may not be removed *except for*:**
  - **A foot path to the water (up to 6’ wide).**
  - **Pruning ground cover that has grown above 3’ to provide a view as long as the pruning does not kill the plant.**

Cultivars that are not on the invasive species list may be planted if no natural ground cover is removed.



***Natural ground cover* – any herbaceous plant or any woody seedling or shrub less than 3' in height, leaf or needle litter, stumps, decaying woody debris, stones and boulders. *Does not include lawns* or invasive species or mulches.**

Note: Natural ground cover includes the duff layer.



Within the Waterfront Buffer, a managed cut of trees, measured with a grid and points system. WB area broken into 50’ segments.

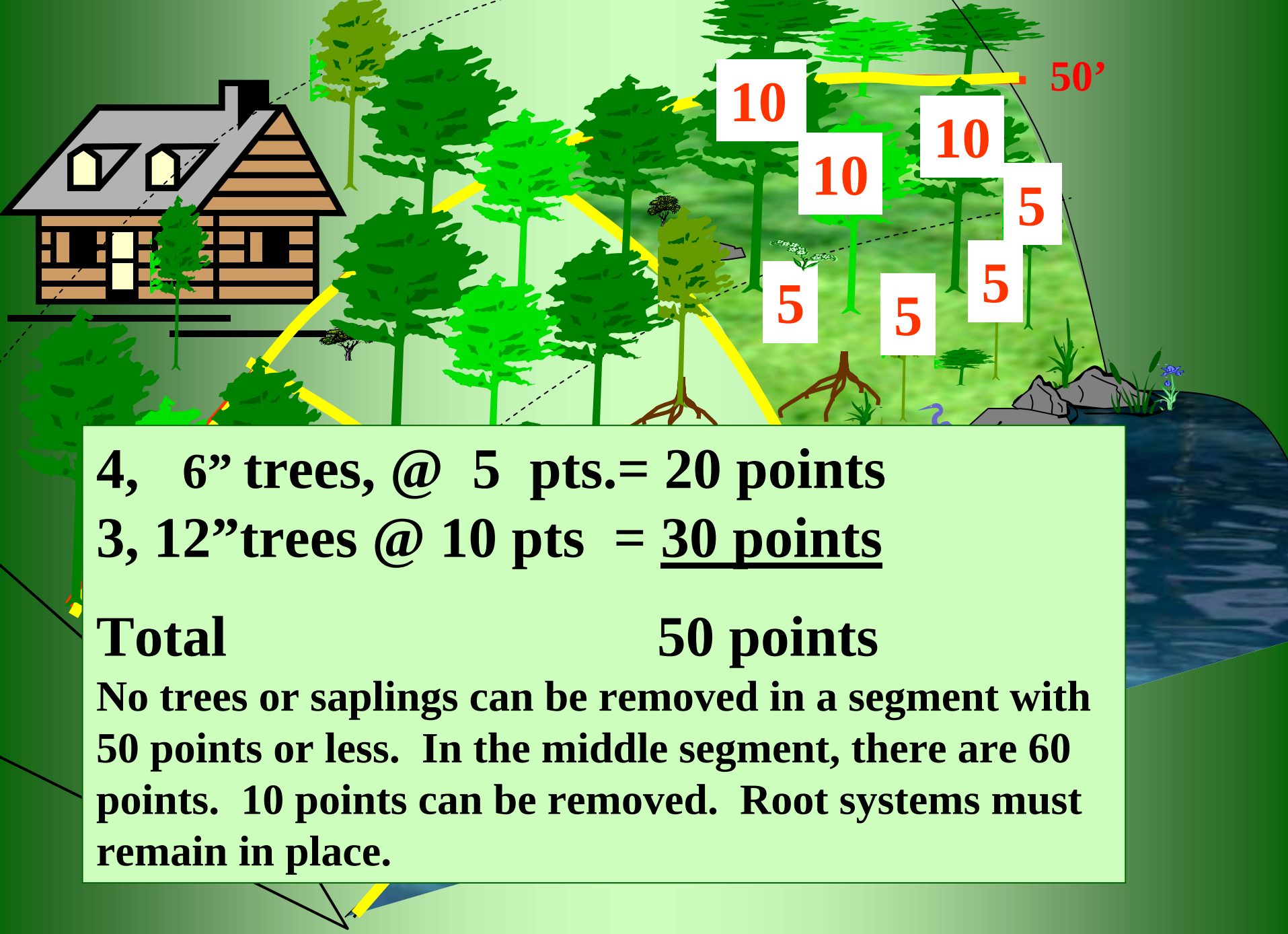
Within each 50’ x 50’ grid or segment, trees totaling 50 points must be maintained.

***Dead trees do not count and are not given points. They may be removed as long as the stump and root system remain.**

Trees are given points according to their diameter size at breast height (dbh 4-½’ from the ground).

Tree Diameter (dbh):

1-6”	= 1 pt
>6-12”	= 5 Pts
12+”	= 10 pts



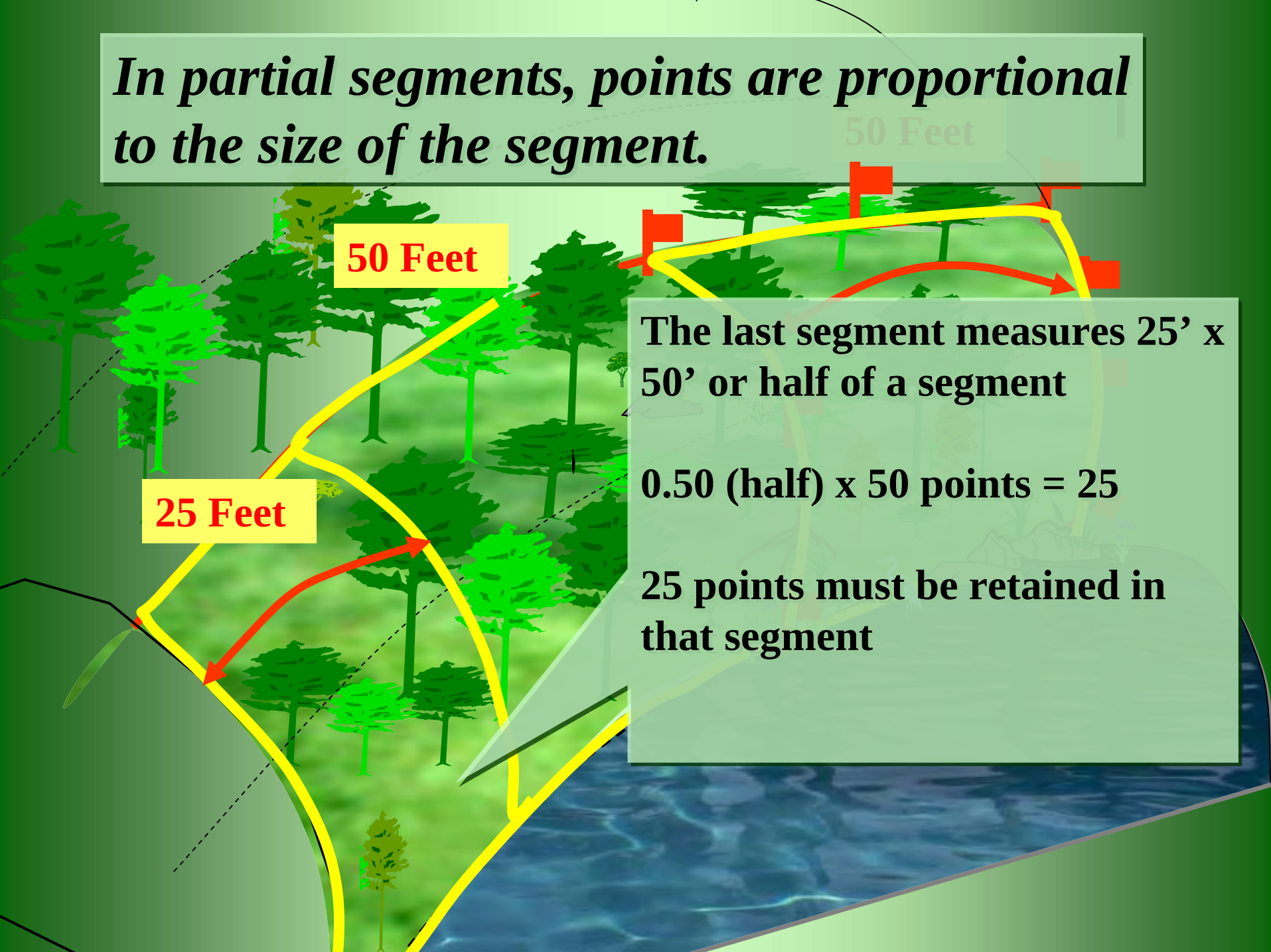
4, 6” trees, @ 5 pts.= 20 points

3, 12”trees @ 10 pts = <u>30 points</u>

Total 50 points

No trees or saplings can be removed in a segment with 50 points or less. In the middle segment, there are 60 points. 10 points can be removed. Root systems must remain in place.

In partial segments, points are proportional to the size of the segment.

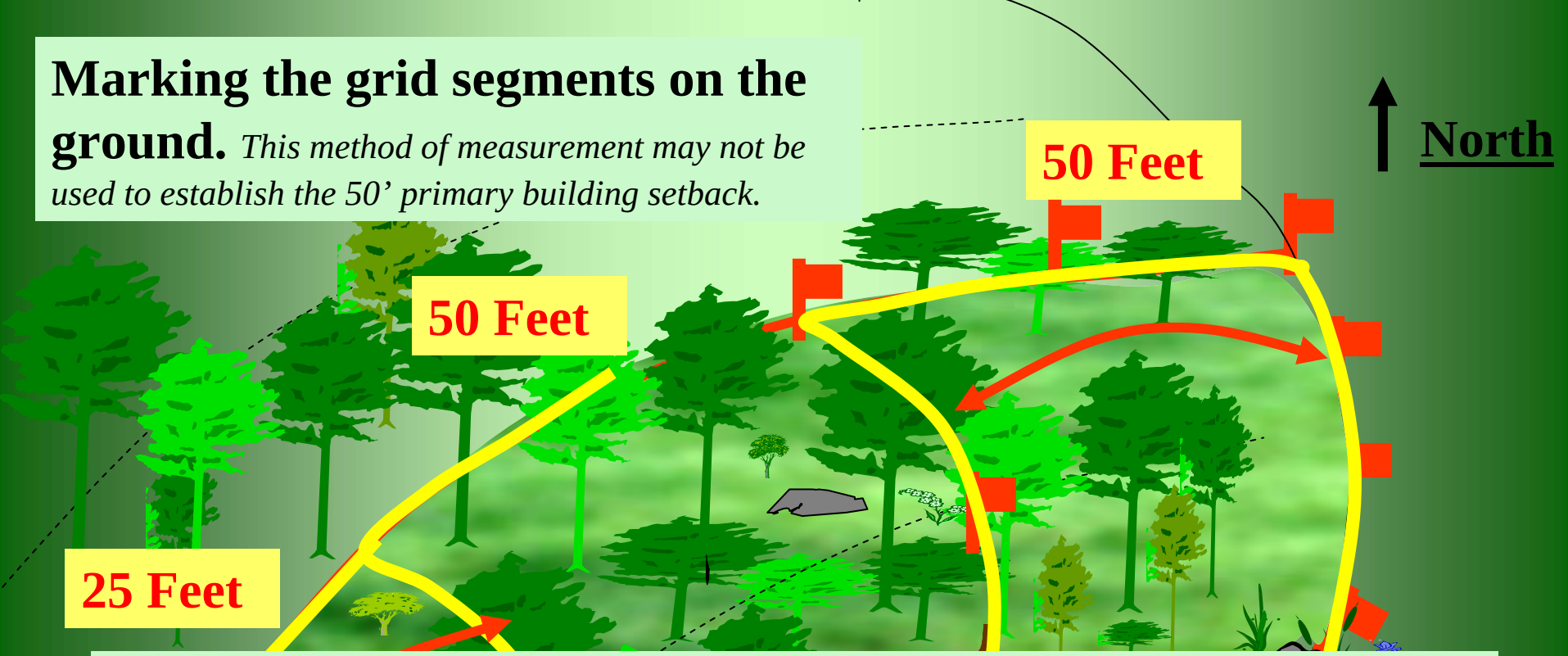


The last segment measures 25’ x 50’ or half of a segment

0.50 (half) x 50 points = 25

25 points must be retained in that segment

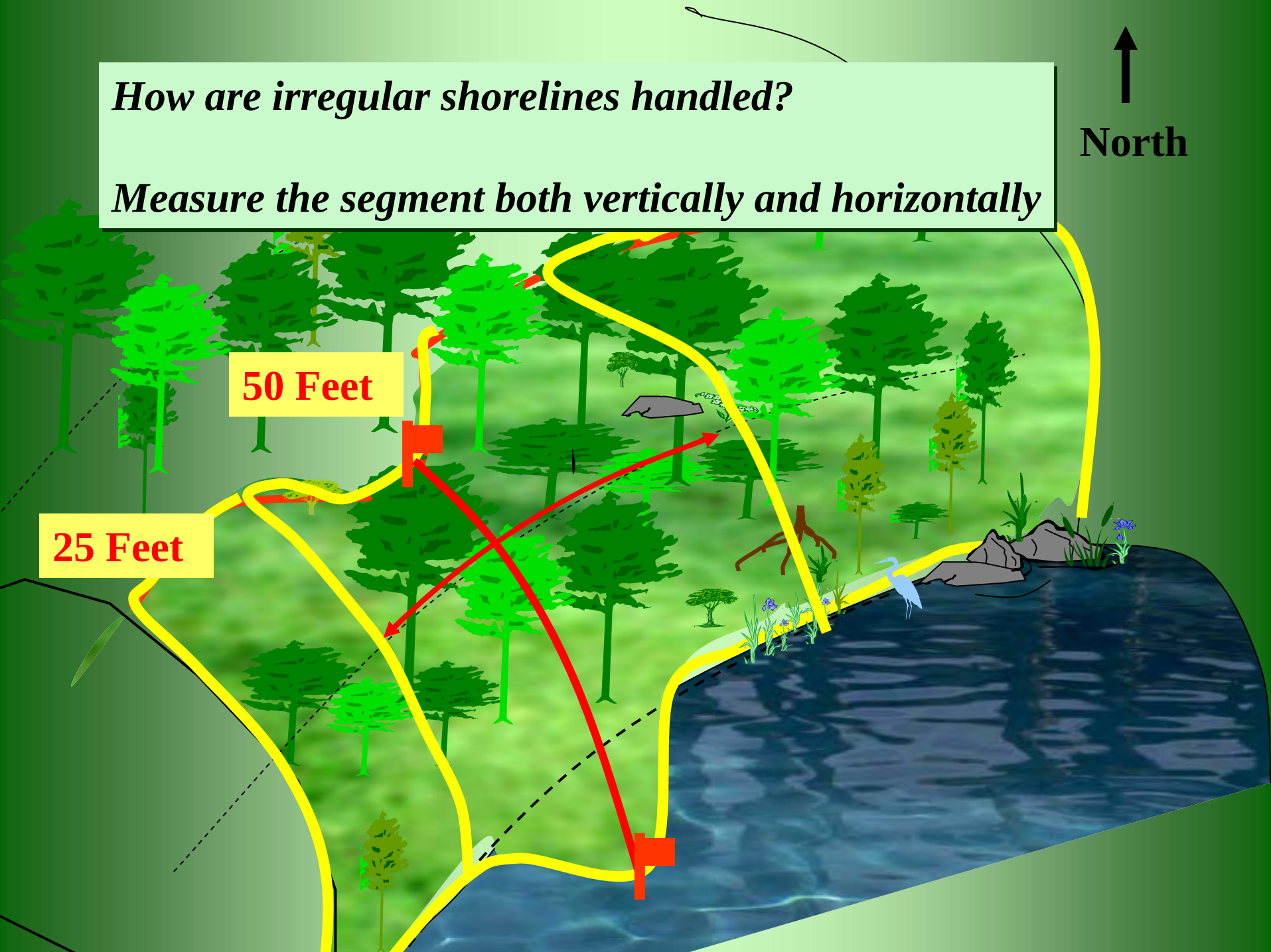
Marking the grid segments on the ground. *This method of measurement may not be used to establish the 50' primary building setback.*



To mark the grid segments, start at the north or east property boundary line. Using flags or string, mark the boundary line. Move across the Waterfront Buffer from the boundary flags in 50' increments and continue until the Waterfront Buffer is entirely covered with grid segments. You may end up with a partial segment. Tree points in partial segments are proportional to the size of the segment. For example, if you end up with a half segment, then only 25 points are required to be maintained in that segment.

How are irregular shorelines handled?

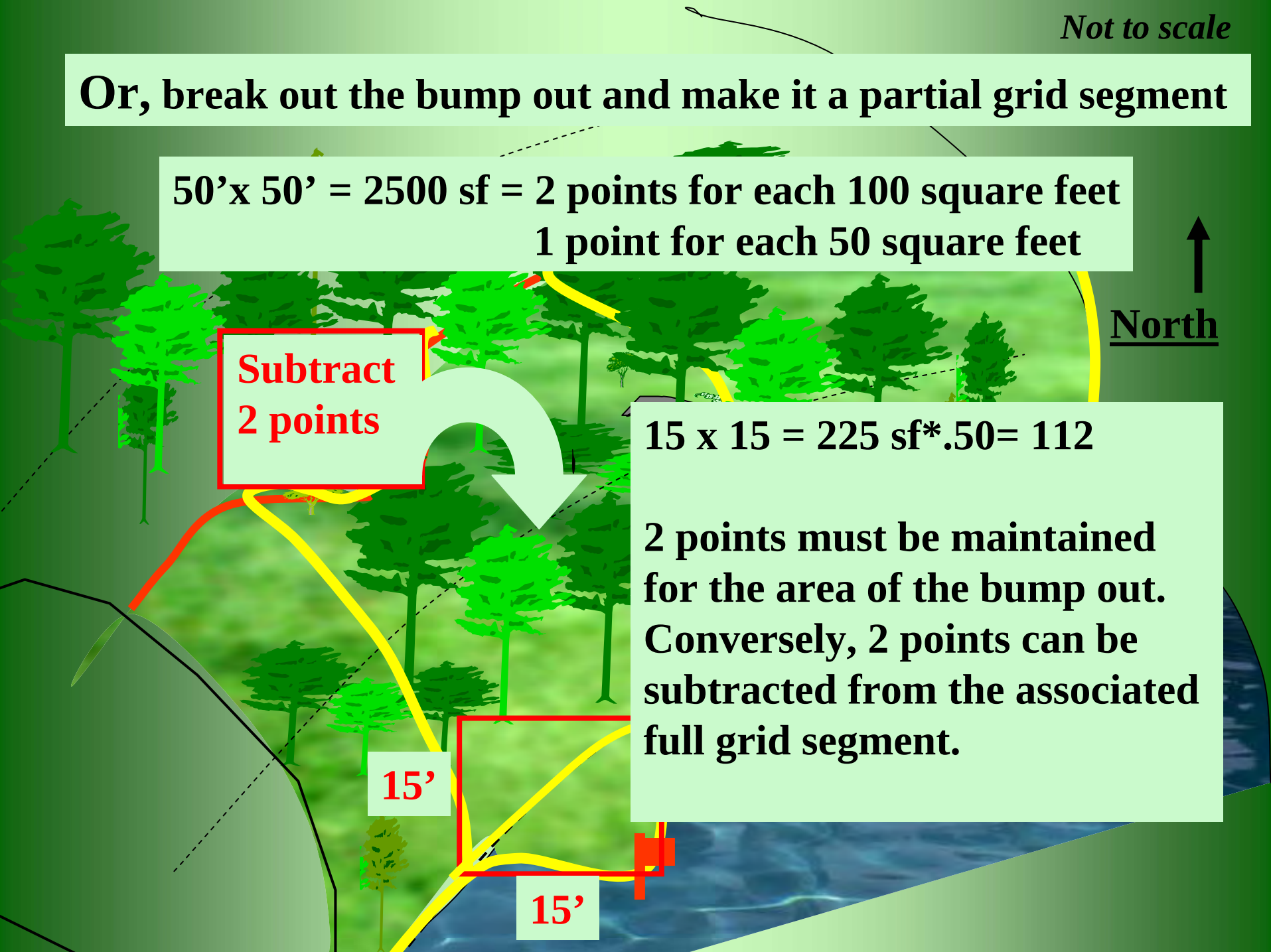
Measure the segment both vertically and horizontally



Not to scale

Or, break out the bump out and make it a partial grid segment

50'x 50' = 2500 sf = 2 points for each 100 square feet
1 point for each 50 square feet



15 x 15 = 225 sf*.50= 112

2 points must be maintained for the area of the bump out. Conversely, 2 points can be subtracted from the associated full grid segment.

Studies show that the threshold for impacts to water quality from impervious surfaces is between 5%-25%.

Impervious Surface Allowance of 20% within the Protected Shoreland

RSA 483-B:VII-a
Definition – "Impervious surface" means any modified surface that cannot effectively absorb or infiltrate water.
Examples of impervious surfaces include:

- **Roofs**
- **Decks**
- **Patios**
- **Paved-gravel-crushed stone driveways unless specifically designed to infiltrate water.**

Exposed ledge is not considered a "modified Surface."

RSA 483-B:9 V(g) Impervious Surfaces

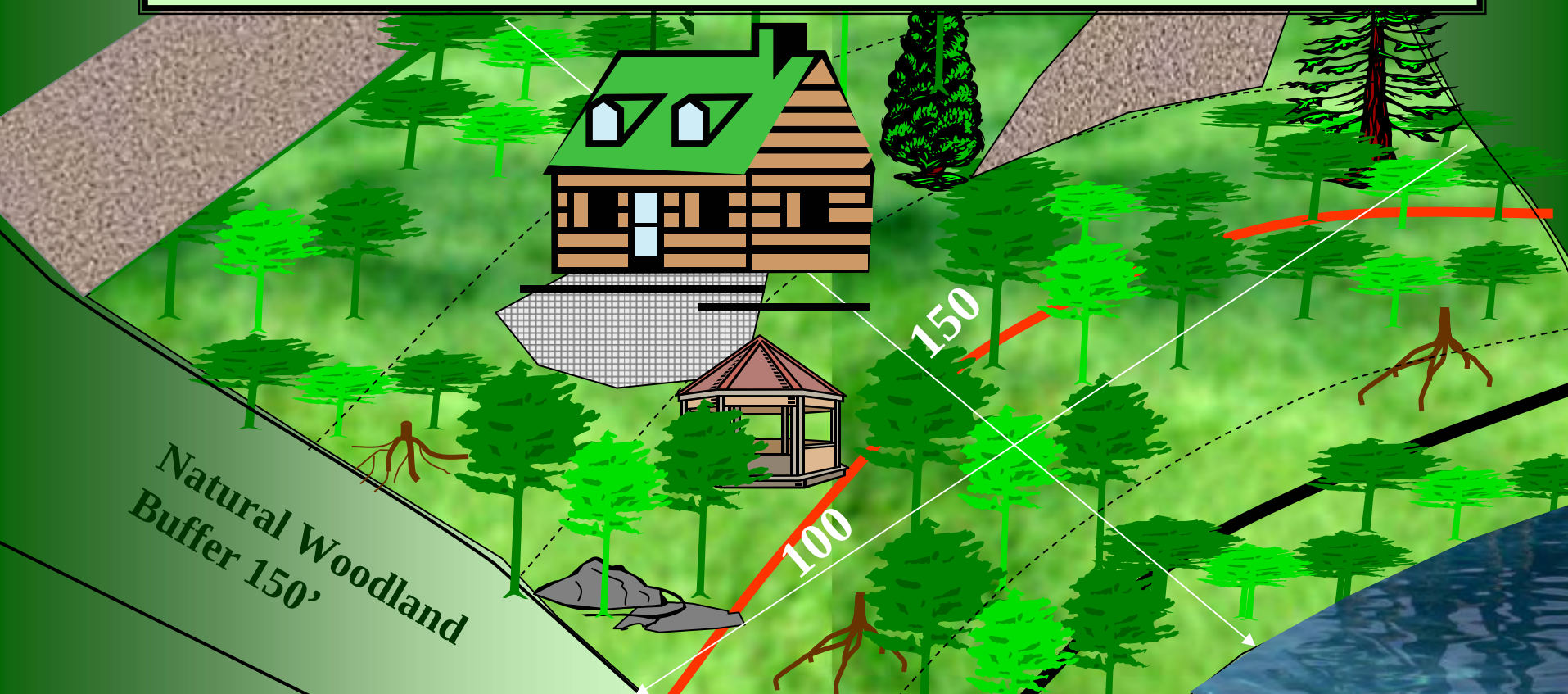
The maximum impervious surface area shall be:
(1) No more than 20% of the area of the lot located within the protected shoreland.

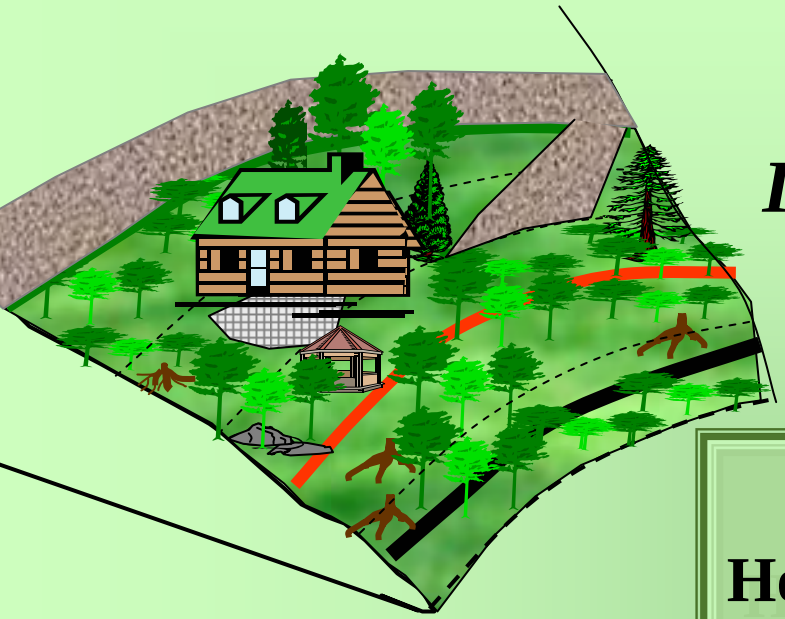
To exceed the 20% allowance (up to 30%) there must be 50 points of trees and saplings within each grid segment in the waterfront buffer (or if there are no existing trees and saplings, an equivalent level of protection must be planted to achieve the 50 points) and a storm water management plan submitted to DES for approval.

Example – Small Lot

Lot Dimensions: 100 x 150 = 15,000 sf

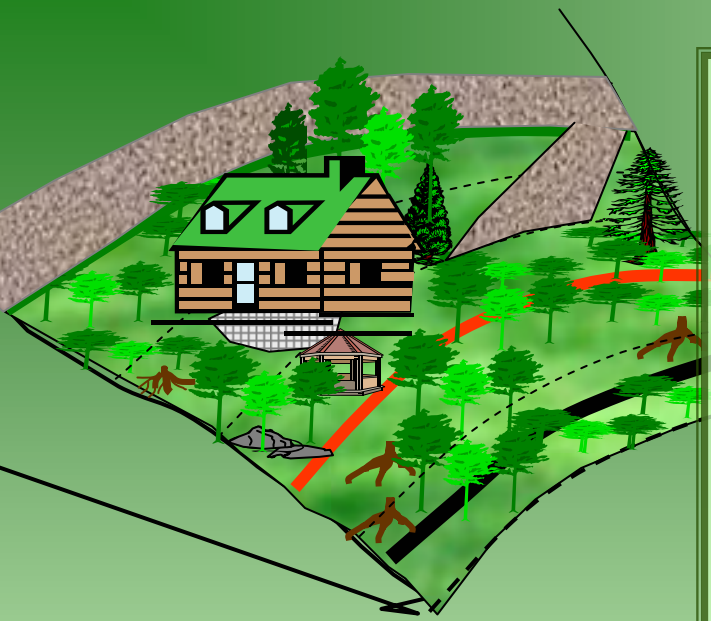
Impervious Surface Allowance 0.20 x 15,000 = 3,000 sf





Impervious surface allowance 3,000

House Footprint	**32 x 40 =**	**1,280 sf**
Driveway	**20 x 50 =**	**1,000 sf**
Patio	**20 x 15 =**	**300**
Gazebo	**20 x 15 =**	**300**
Shed	**8 x 15 =**	**120**
		3,000 sf



House *Footprint*	32 x 40 =	1280sf
Driveway	20 x 50 =	~~1000 sf~~
Patio	20 x 15 =	~~300~~
Gazebo	20 x 15 =	300
Shed	8 x 15 =	120

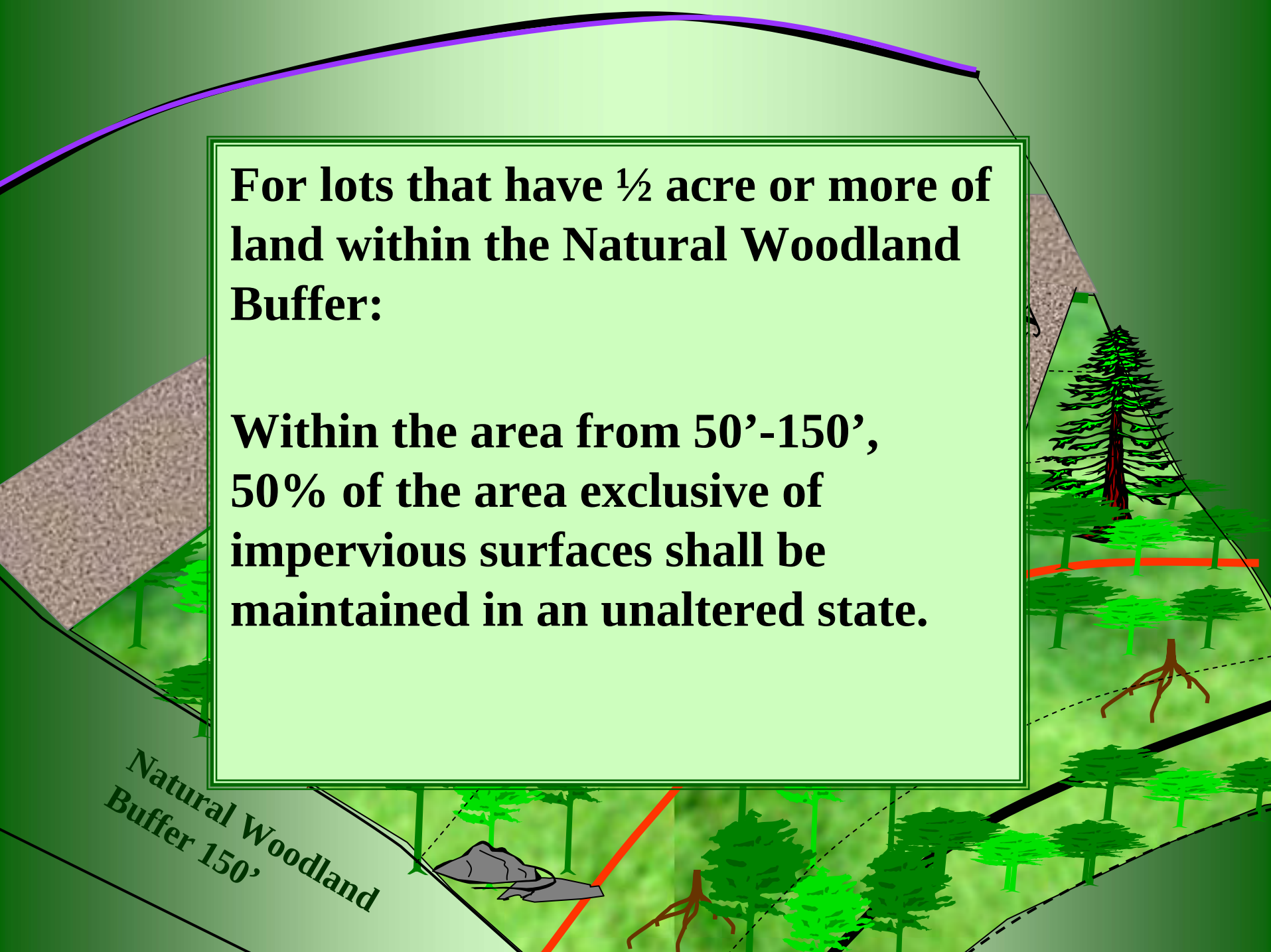
Permeable pavers/pavement is not included in the impervious calculation

For more information on pervious technologies, visit the UNH Stormwater Center's website:

www.unh.edu/erg/cstev/Presentations/index.htm

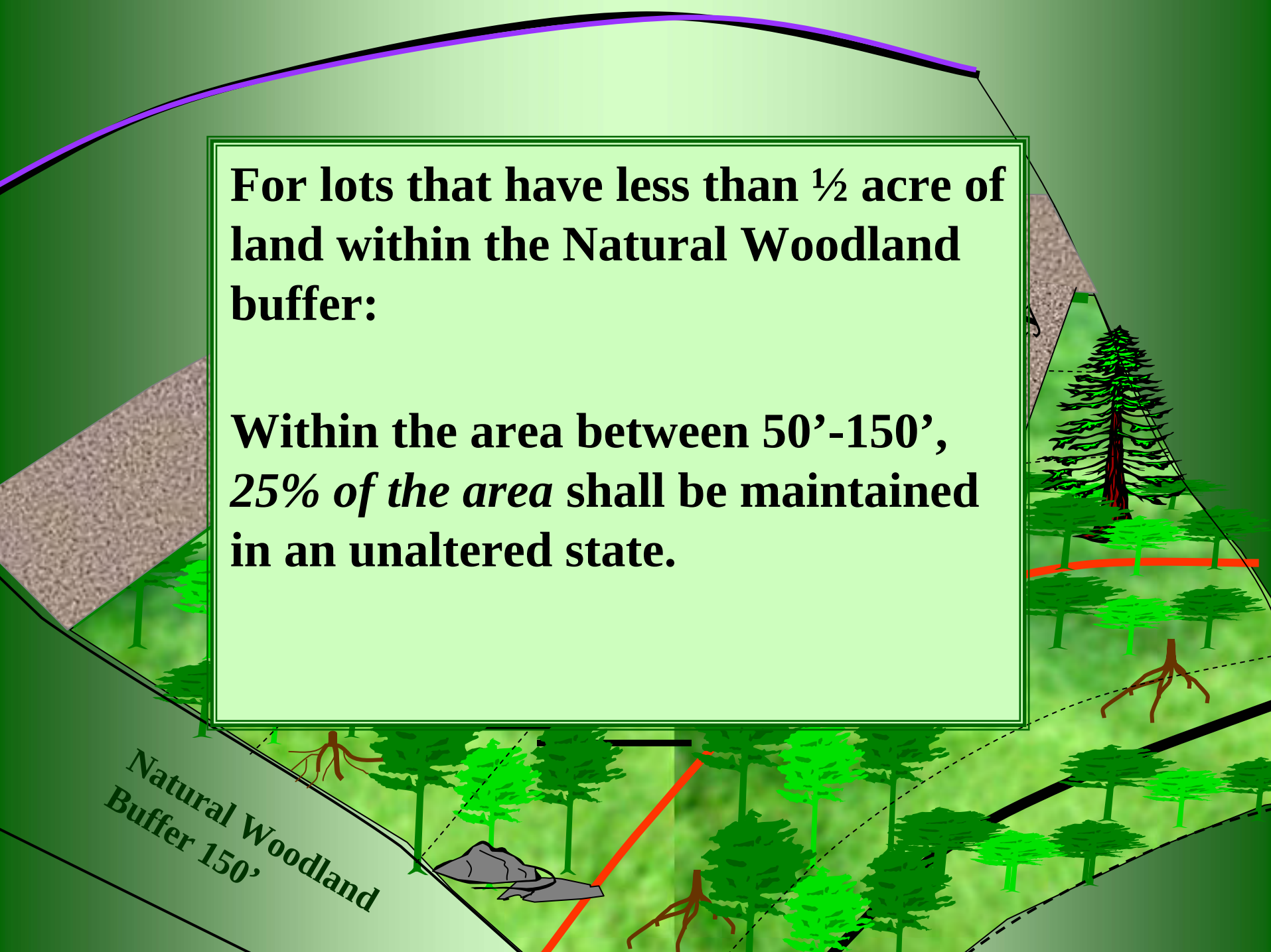
For lots that have ½ acre or more of land within the Natural Woodland Buffer:

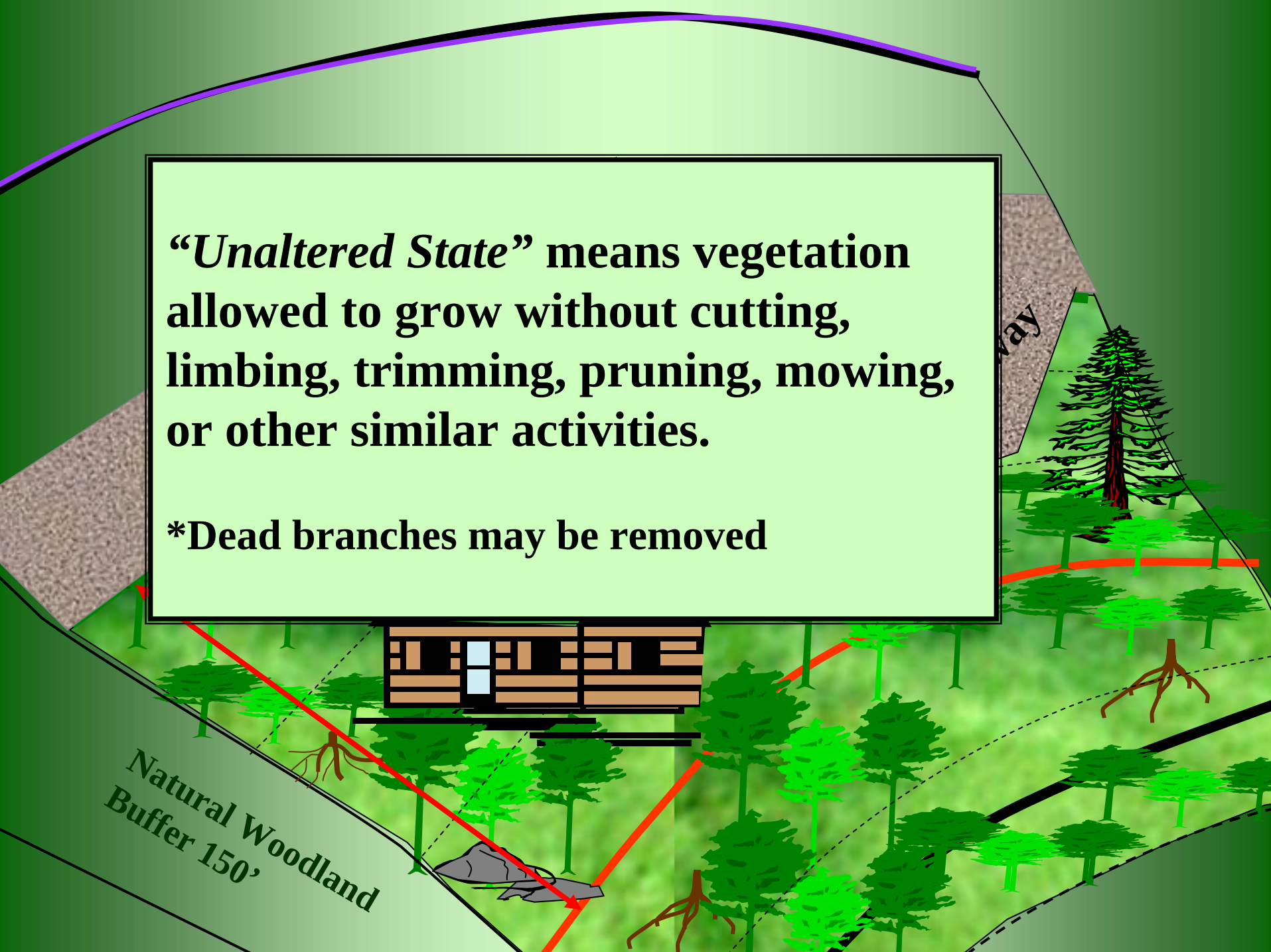
Within the area from 50’-150’, 50% of the area exclusive of impervious surfaces shall be maintained in an unaltered state.



For lots that have less than ½ acre of land within the Natural Woodland buffer:

Within the area between 50’-150’, *25% of the area* shall be maintained in an unaltered state.




"Unaltered State" means vegetation allowed to grow without cutting, limbing, trimming, pruning, mowing, or other similar activities.
*Dead branches may be removed
Natural Woodland Buffer 150'

New Permit Requirements

A permit will be required for many construction, excavation or filling activities within the Protected Shoreland.

The permit application fee is $100 plus 10 cents per square foot of area affected by the activity.

Fees will be capped as follows:

Square Feet	Cap
0 - 9,999	$ 750
10,000 - 24,999	1,875
25,000 +	3,750

When the proposed project is in compliance with the CSPA and all of the required information is submitted:

Within 30 days of receipt of the application, DES shall request any additional information … or approve … or deny unless there is a waiver or variance associated with the application.

If there is a variance or waiver with the application, DES has 75 days …

Construction of public roads, public utility lines and associated structures, and public water access facilities are exempt from the permitting fees.

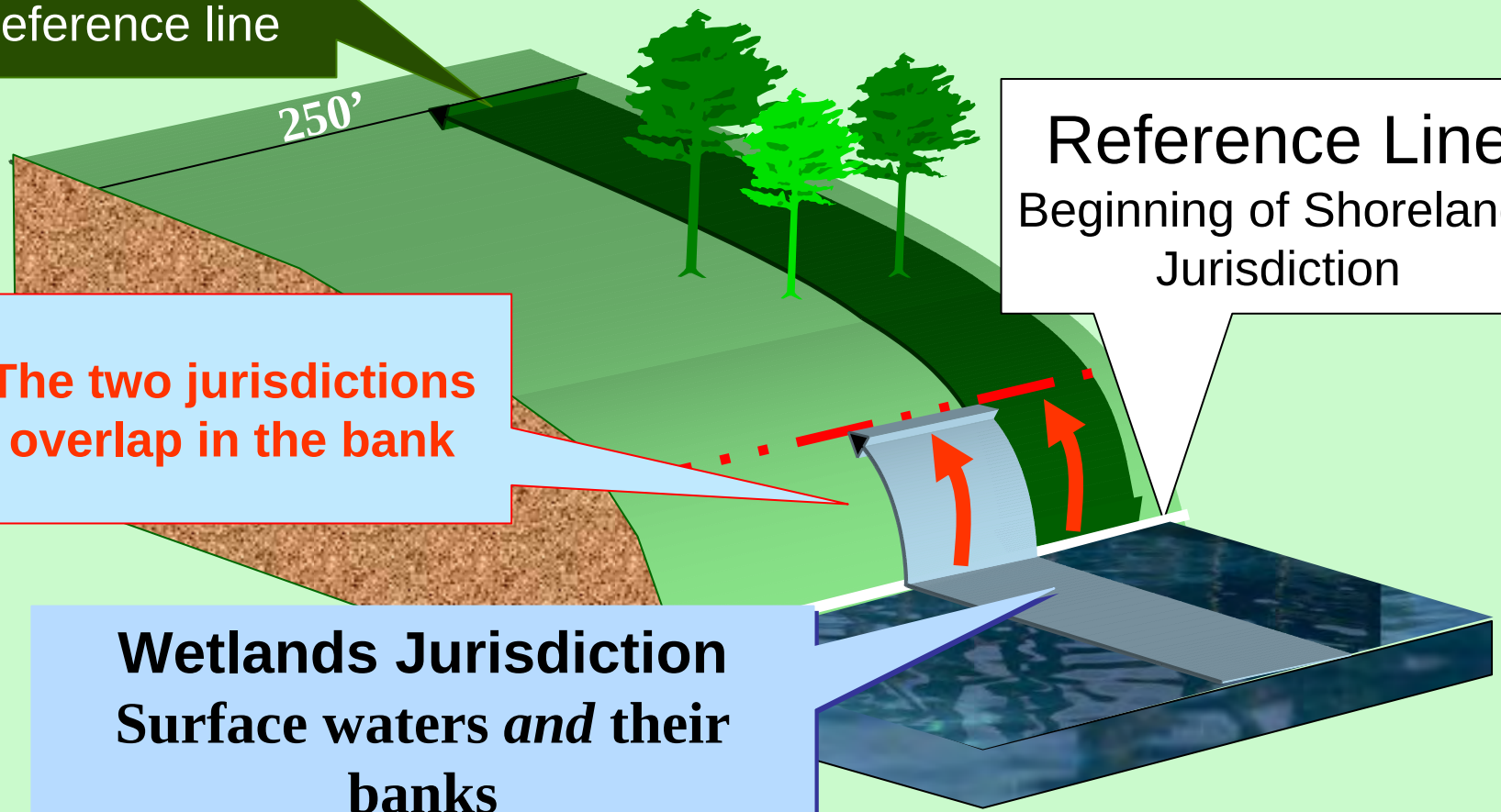
Projects that require a wetlands permit will not also require a shoreland permit.

Jurisdictions

Shoreland Compared with Wetland

(freshwater)

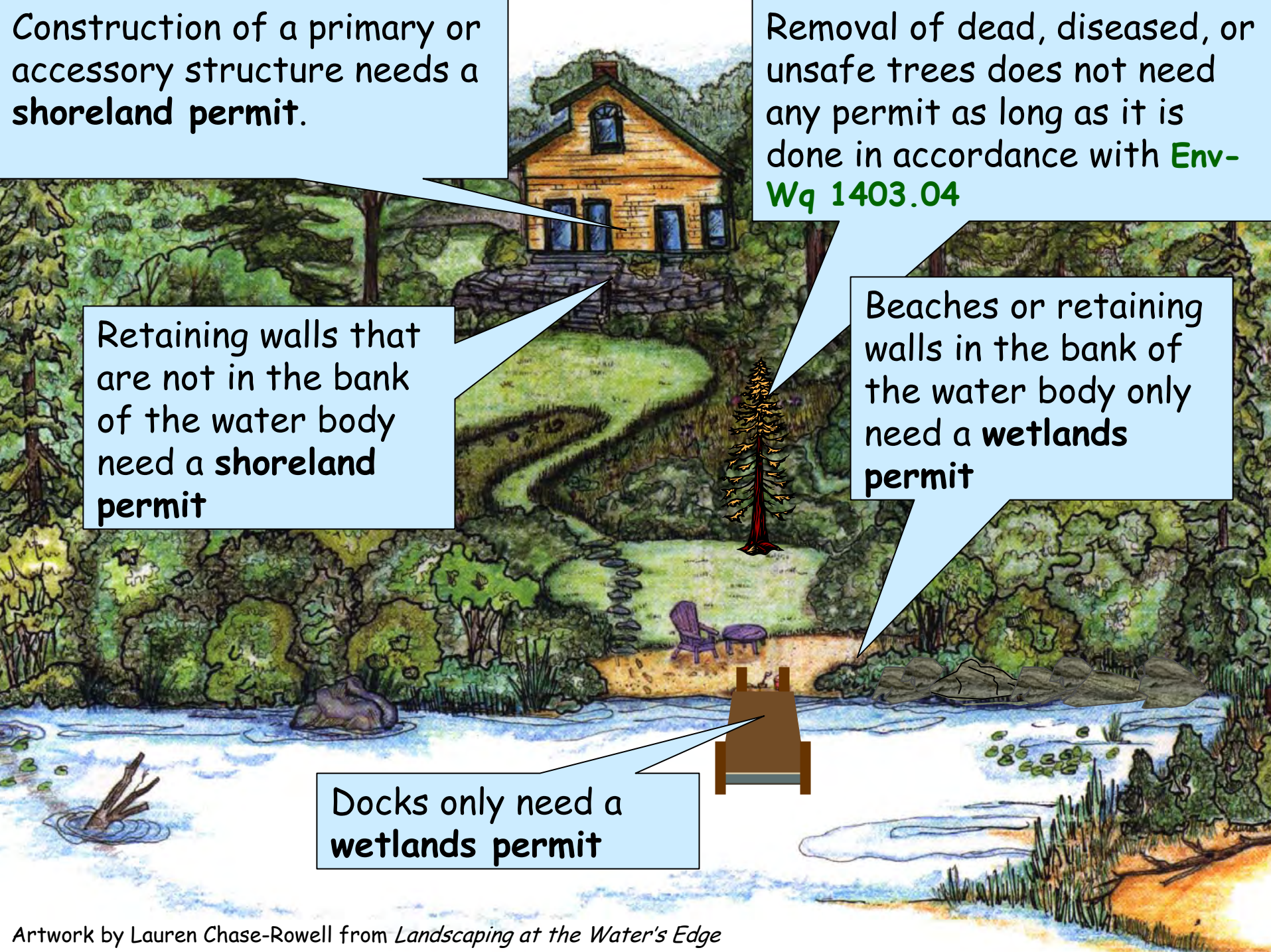
Protected Shoreland
Land within 250 ft
of the reference line



Reference Line
Beginning of Shoreland Jurisdiction

The two jurisdictions overlap in the bank

Wetlands Jurisdiction
Surface waters *and* their banks



Artwork by Lauren Chase-Rowell from *Landscaping at the Water's Edge*

Some Examples of Low Impact Activities that Do Not Require a Shoreland Permit (Env-Wq 1406.03)

- **Trimming, pruning, and thinning of branches to protect structures and provide views.**
- **Removal of trees and saplings in accordance with the grid and points system.**

Nonconforming Structures …

May be repaired, renovated, or replaced, provided the result is a functionally equivalent use and result in no *expansion of the footprint except as authorized by DES.*

Prohibition on vertical expansion is eliminated

More Examples of Low Impact Activities that Do Not Require a Shoreland Permit (Env-Wq 1406)

Maintenance and repair, or modification of an existing, legal, primary structure that does not:

- **Alter the footprint or impervious area of the structure.**
- **Result in the removal of vegetation.**
- **Result in an increase in sewage loading.**
- **Increase the number of residential units on the property.**
- **Result in any excavation or filling within the protected shoreland.**

May need a permit from the DES Subsurface Bureau

Subsurface Requirement:

Env-Wq 1004.15 … Replacement … reconstruction of a building in a new location, **or any expansion of an existing structure,** shall be considered new construction which requires submission of an application … in accordance with Env-Wq 1003, unless all of the following are true:

As compared to the structure it is replacing, the new structure will have:

a. The same footprint;

b. The same ridgeline;

c. The same usable interior space; and

d. The same use; and a valid construction and operating approval exists for the existing total sewage load, as determined by Env-Wq 1008.03.

More Examples of Low Impact Activities that Do Not Require a Shoreland Permit

- **Maintenance of a grandfathered open area such as mowing a lawn, raking leaves.**
- **Installation of a fence using hand tools.**
- **Replacement of a failed septic system under a permit from Subsurface and provided there is no increase in loading.**
- **Planting of non-invasive vegetation or maintenance of existing gardens within the allowable disturbed area using hand tools.**

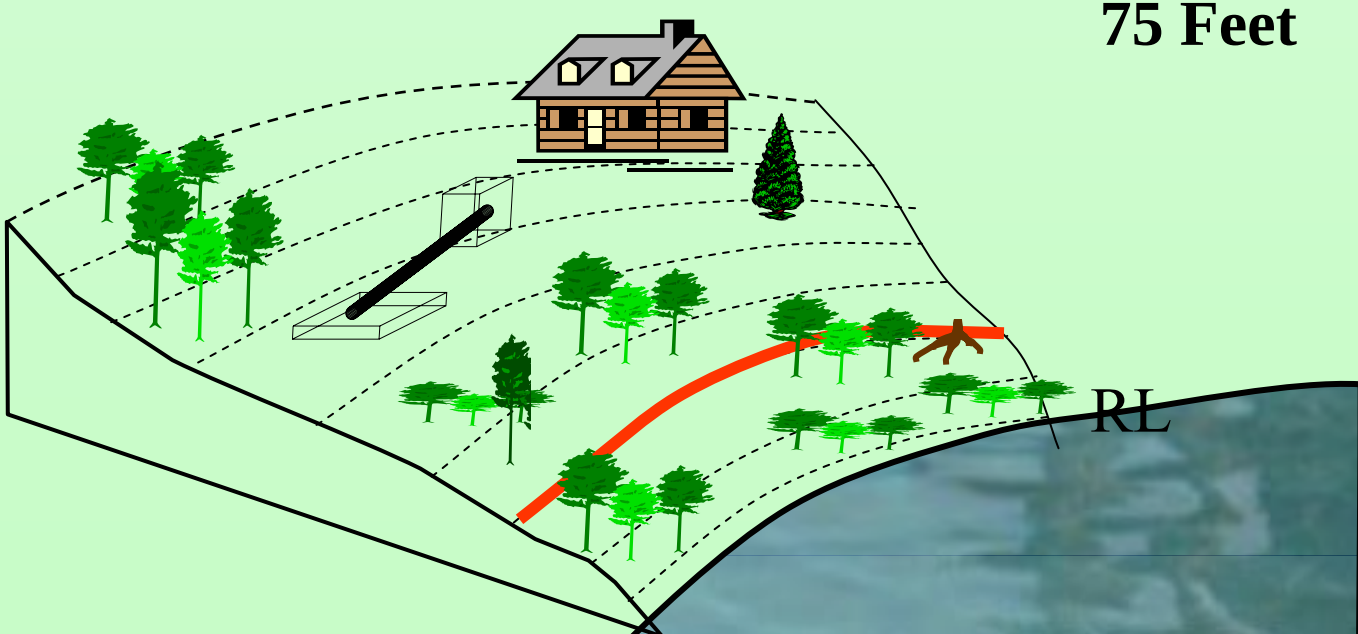
RSA 483-B:9

Septic System Setbacks

Ponds, Lakes, Estuaries, Open Ocean

- Standard setback from surface water — 75 feet
- With a restrictive area close (18”) to the surface — 100 feet
- With excessively drained soils (perc ≤ 2min/in) — 125 feet

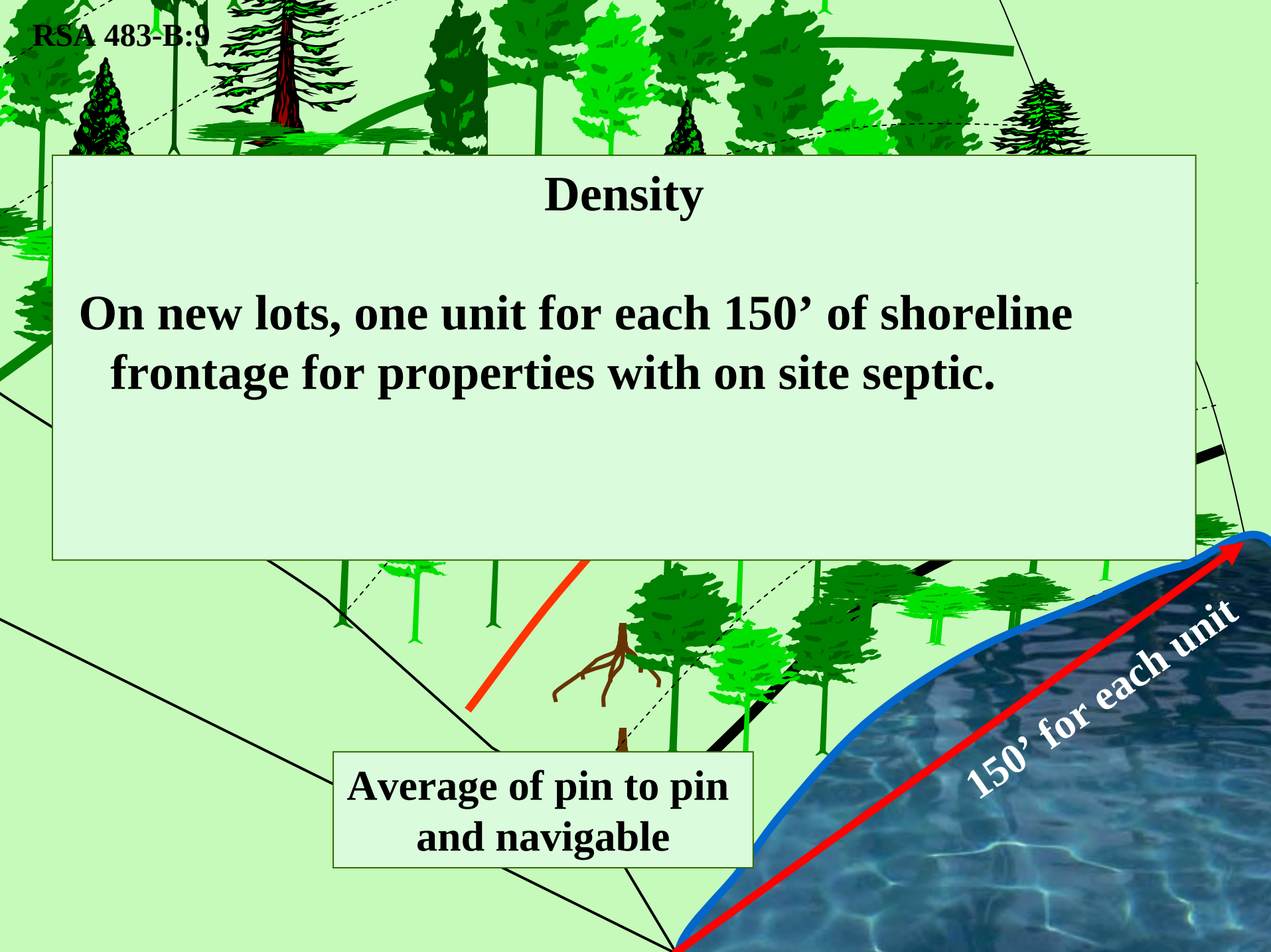
Rivers — 75 Feet



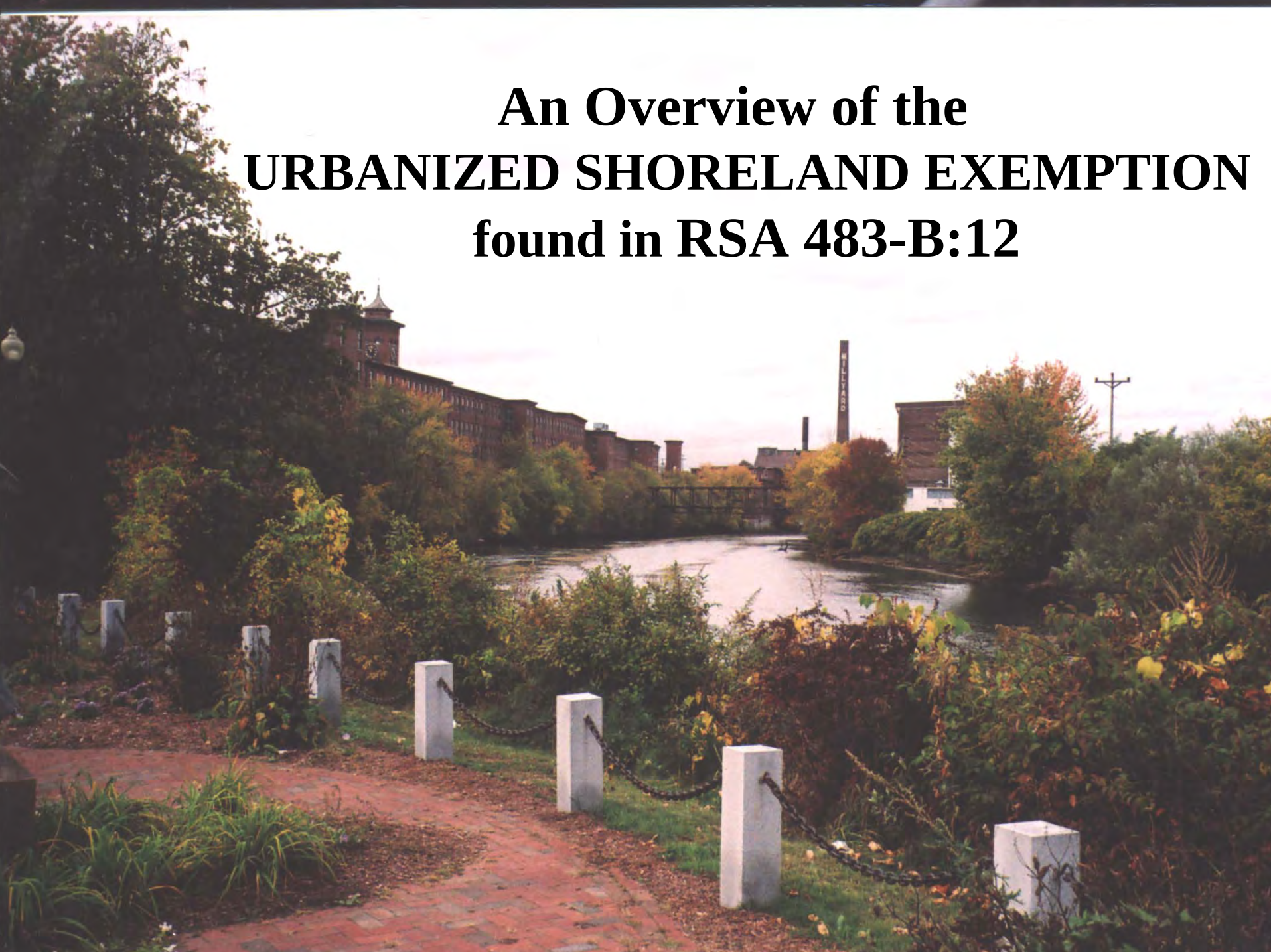
RSA 483-B:9

Density

On new lots, one unit for each 150’ of shoreline frontage for properties with on site septic.



An Overview of the URBANIZED SHORELAND EXEMPTION found in RSA 483-B:12



URBANIZED SHORELAND EXEMPTION

PART Env-Ws 1410

Env-Wq 1410.02 Eligibility for Urbanized Shoreland Exemption.

(a) Pursuant to RSA 483-B:12, I, the governing body of a municipality may, in its discretion, request the commissioner to exempt all or a portion of the protected shoreland within its boundaries from the provisions of this chapter if the governing body finds that special local urbanization conditions exist in the protected shoreland for which the exemption is sought.

URBANIZED SHORELAND EXEMPTION

Evidence of existing and historic patterns of building and development:

(1) Current and historic building density.

(2) Current commercial or industrial uses.

(3) Municipal or other public utilities.

(4) Current municipal land use regulations that affect the protected shoreland.

URBANIZED SHORELAND EXEMPTION

PART Env-Ws 1410

The applicant for an urbanized shoreland exemption shall … provide:

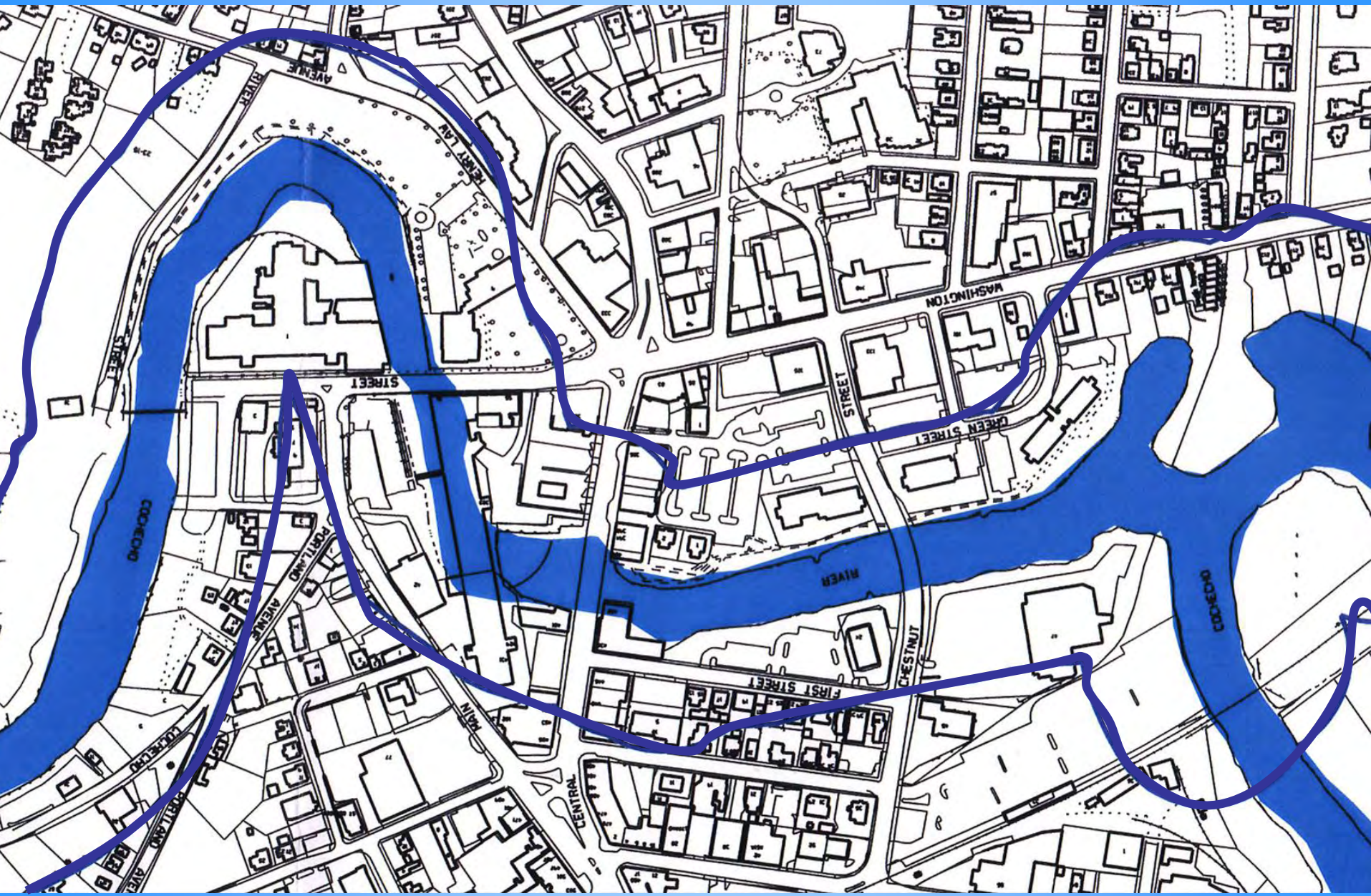
(1) The number of structures in sight from the water body;

(2) Density allowed under current local zoning ordinances;

(3) Extent of non-residential land use currently existing;

(4) One or more maps that clearly define the boundaries of the area to be exempted, based on lot lines as shown on a municipal tax map; and

(5) If available, a recent aerial photograph of the area.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STREET
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